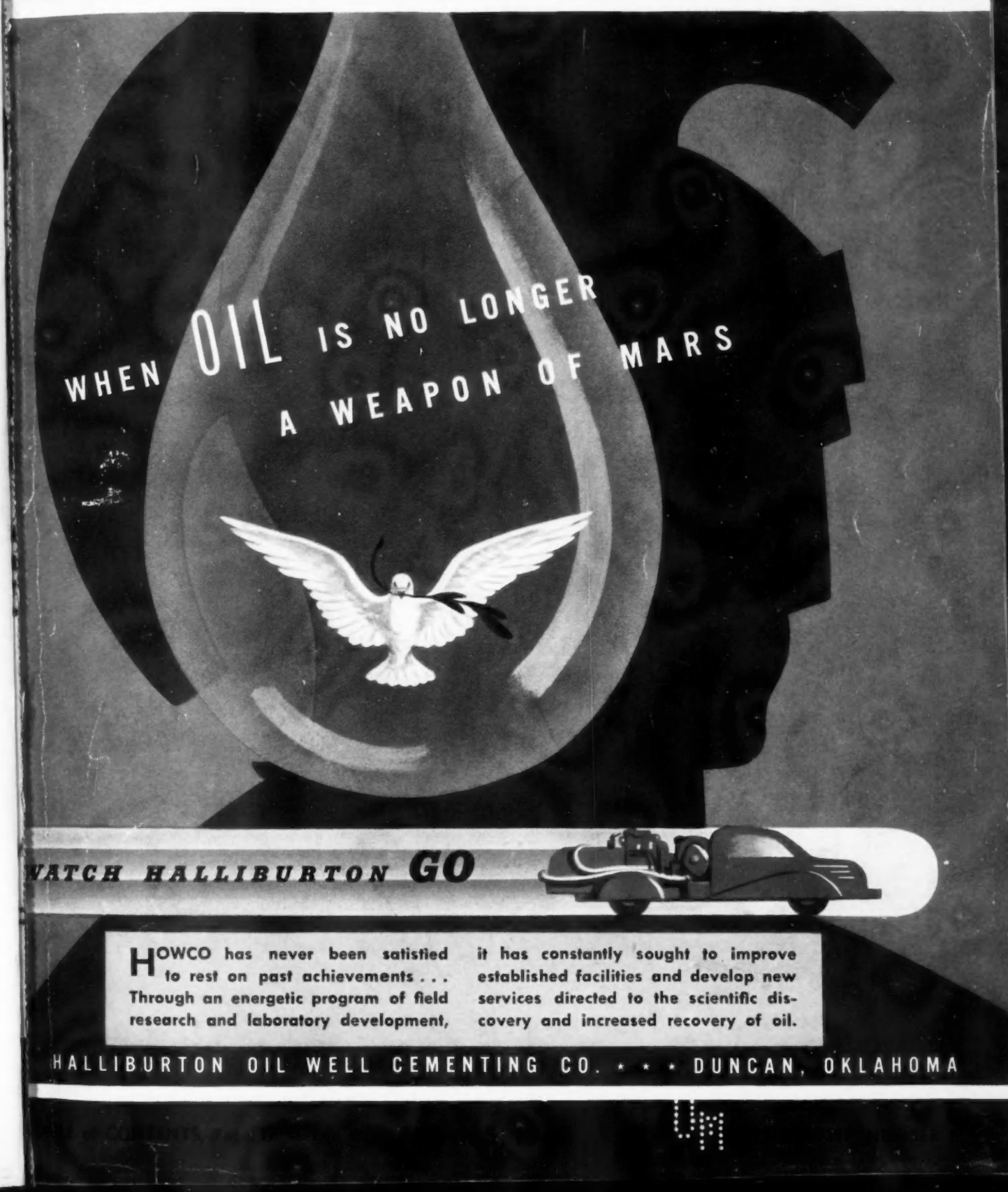
The OIL WEEKLY



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LOOKING AHEAD
... with the Editor

IN MARSHY and swampy sections of the Gulf Coast country, few problems confronting operators offer greater difficulty than that of transportation. In normal times it is extremely difficult to move all the necessary equipment to remote and isolated locations in this territory on account of the terrain and water. Since trucks, tires, and hauling apparatus in general have become so hard to get and to maintain, many favorable locations have been left undrilled.

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All the features of the road are discussed and illustrated in an article by Elton Sterrett, Staff Writer of THE OIL WEEKLY, to appear in an early issue.

THE OIL WEEKLY

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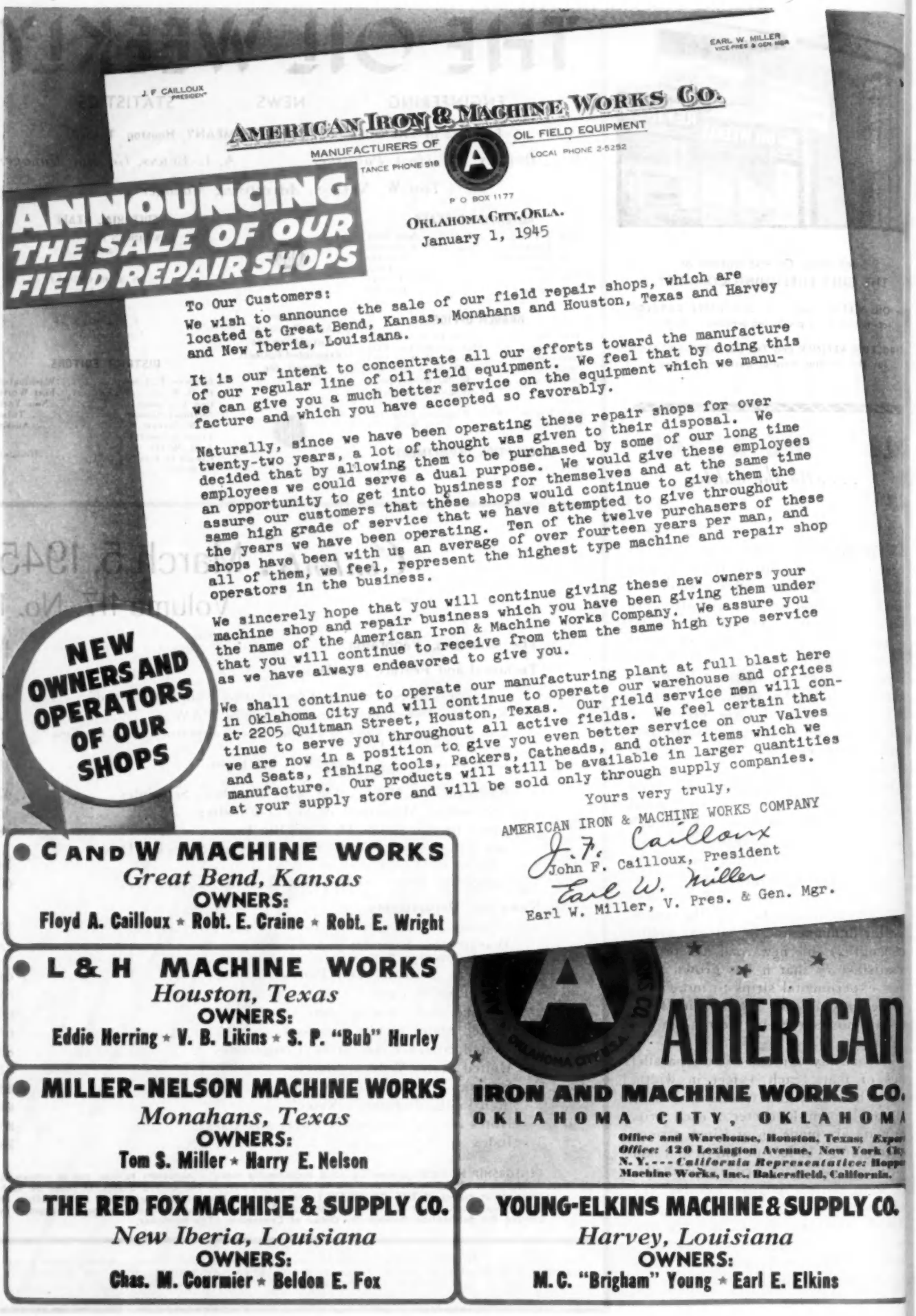
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The Changing Panorama

Heavy Draft Demand Means Industry Must Really Buckle Down

INDUSTRY may as well face the fact it is going to lose many men, even key men, who heretofore have appeared safe from military service. A new turn in the draft threatens to send into military uniform thousands of men who in the past have been deferred because of their essential occupations.

Draft boards have been instructed by Selective Service to set up new classifications. These will become effective April 1.

All industries, regardless of their essentiality, can expect to lose 70 percent of the men aged 18 through 29 who have had occupational deferment. Because draft boards are exhausting their supply of men under 30, the pressure is on this group. This prospective loss of 70 percent of the men in this age bracket will be applied on an industry-wide basis. This means the oil industry probably will lose 70 percent of all its men 18 to 29 engaged in production, drilling, transportation, refining and servicing operations. Refiners stand to lose a larger number of these men than other branches of the petroleum industry, because they have had more such deferments. This has been due to the deferment of young chemists and engineers for work at refineries, aviation gasoline plants and synthetic rubber plants. Only a comparatively small number of men under 30 are engaged at present in drilling, production and transportation activities, it is thought. However, due to their small number, the loss of additional men from the latter occupations probably will constitute as serious a problem as in refining.

Last week PAW, which has been appointed the oil industry's deferment agency, announced the procedure whereby petroleum may hope to retain a limited number of men under 30. Details of this plan are presented on page 32 of this issue. Every company or operator who still has men on the payroll under 30 should immediately fill out the required forms, and in doing so should adhere strictly to the procedure outlined. This is extremely important. In filling out the forms the name of every employe under 30 should be listed.

Because draft boards are exhausting their supply of men under 30, and the Army's insistence upon keeping the age of its men as low as possible, industrial employes aged 30 through 33 also are more vulnerable to the draft than in the past. Men in this age bracket now occupy the place in the induction schedule formerly occupied by men aged 26 through 29.

Chances of men aged 34 through 37 being taken are diminished. However, some will continue to be inducted in communities where draft boards cannot otherwise meet quotas.

The new squeeze is due to the supply-demand situation. Armed forces have set a quota of 900,000 men for the first six months of 1945. About 150,000 boys aged 17 are expected to enlist in the Navy. Another 240,000 are to be drafted upon reaching 18. This is a total of 390,000 men, leaving 510,000 to come from other groups.

The new induction schedule for men aged 18 through 29 is expected to yield another 350,000 in the first six months of the year. The remaining 160,000 men needed to fill draft calls will come from the 30 through 33 age group.

This new draft schedule imposes a heavier burden upon industry. It may even result in some curtailment of industrial output. It certainly means industry must buckle down as never before to its job of producing the implements and commodities essential to the war.

Only an early end to the war in Europe can change these prospects.

First Petroleum Shortage Scare

THE first petroleum shortage scare, says the Petroleum Industry Research Foundation in its recent booklet, *World Oil-Fact and Policy,* occurred in the middle 1850's, before Colonel Drake drilled his first well.

In a drug store window in New York was shown a half pint bottle of crude oil labeled "Kier's Petroleum or Rock Oil" and alongside the bottle was a placard bearing, among other things, the words, "Hurry before this wonderful product is depleted from nature's laboratory!"

Nation Doesn't Need Oil Investigation

IT IS difficult to imagine what has prompted Representative Voorhis of California to introduce House resolution 27. Apparently he is suspicious of the oil industry or he is uninformed about what has been going on during the past four years.

His resolution directs the speaker of the house to appoint a committee to obtain and lay before Congress full facts regarding:

1. The extent of petroleum reserves in the United States and its possessions.
2. Extent of holdings of various oil companies of such reserves with particular references to the degree to which they are owned by major integrated oil companies.
3. Extent to which monopolistic practices exist in the petroleum industry.
4. Analysis of the policies pursued by major oil companies of America with regard to control over production, handling of reserves, management of pipe lines, distribution and marketing of petroleum products and any other related and pertinent matters.
5. Relationship of various groups in the oil industry to federal and local government of the United States.
6. Extent of oil reserves underlying public domain.
7. Potential sources of petroleum outside the United States and its possessions, including recommendations as to governmental policy to be pursued with regard thereto.

Anyone familiar with the various reports that have been laid before Congress since 1940, knows that most of his points contained in the resolution have been thoroughly covered. For instance, the Lea committee compiled a very comprehensive analysis of the oil industry, at considerable expense to the government, no doubt. Hearings have been held in various sections of the country on some of the phases of the industry he mentions. Certainly all the statistical information Voorhis would require is already in the hands of the various departments of the government. There may be a point or two in his proposed investigation on which information has not been compiled, but there is no good reason for spending time or the public's money for another "investigation."

Surely the great majority of Con-

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gressmen will agree that there are too many pressing problems before that body to take up time on a matter that on its face cannot be justified. From where we see the picture, it looks like Representative Voorhis is having a hard time finding something constructive to occupy his mind.

☆

The average increase in costs for all operators and drilling contractors who testified is 64.9 percent higher in 1944 than the 1941 cost figure.

—From Summary of Testimony at Austin, Texas, hearing before House Committee on Small Business.

Sound Conservation Statutes Important

THE two bills introduced into the Texas Legislature designed to provide gas conservation are definitely a step in the right direction as to intent, but leave much to be desired as to execution. The bills are identical, being introduced into the Senate by Hazelwood as S.B 185, later withdrawn, and into the House by Sadler, Swanson, N. F. Smith, and Hoyo as H.B. 470.

It is questionable that the bill would be valid if passed in its present form inasmuch as it is a measure which would amend portions of the present statutes and only recites portions of sections. Section 36 of Article 3 of the Texas constitution states that no law shall be revived or amended by reference to title, but in such case the act revived or the sections amended shall be re-enacted and published at length.

The most wholesome parts of the bill from the standpoint of conservation are those which place condensate under the same regulation as oil, those which get away from the 100,000 to 1 ratio in definition of gas wells, consideration of casinghead gas in market demand, and stipulation of net gas oil ratios, both for oil production and for gas lift.

These features are all needed in gas legislation, but the bill as finally passed should be very concise and not subject to evasion.

In the definition of the term "condensate" as a hydrocarbon existing as a gas in the reservoir and produced as a liquid through condensation at pressures or temperatures below those of the reservoir, it might have been well to stipulate that reference is to the original state of the reservoir, since some retrograde condensation which may occur in the reservoir immediately around the bottom of a well bore could be used as a basis for placing the well in the wrong classification. In such cases the existence of liquid in the reservoir because of condensation might cause the well to be classified as oil and its production restricted under the gas-oil ratio provisions applicable to oil wells.

The net volumetric withdrawal factor for ratios is a wise provision, but some have pointed out that it is not entirely accurate as set out in the bill, since it allows withdrawal of the volumetric equivalent of the gas produced with oil in oil wells, but makes no allowances for the extra volume of oil not being produced in the restricted well.

Section 14 of the proposed bill states that gas produced with oil and reasonably accessible to market shall be given first consideration by the commission in determining the reasonable market demand for gas. Some oil and gas men think this should have been much more specific and that gas produced with oil and reasonably accessible to market should be used first in filling the demand.

Proration of gas ratably among wells in individual fields is an excellent and sound provision, pointed out many times as the basis for true gas conservation, and should certainly be included in any measure. However, the section refers to Section 21, Article 6008, dealing with voluntary pooling in gas fields. It has been pointed out that this section itself should be broadened to include oil as well as gas-cap fields, where proper control of gas would have a direct beneficial effect upon ultimate recovery of crude oil.

There is also some question as to the wording of Section 15, dealing with the prohibiting of production of gas above 10 percent of its daily productive capacity, and authority to adjust percentages to prevent waste. The commission is given powers to adjust for the purpose of preventing waste as long as increases will not create drainage conditions between sweet and sour gas lands. It seems just as important for protection of correlative rights to prevent drainage between properties within either sweet or sour gas areas.

The passage of sound conservation legislation is of utmost importance, and it is equally as important that it be voted now. Many important reservoirs could be ruined between this session of the legislature and the next for lack of proper development and control. However, each proposed section should be given the closest attention so that the finished bill will be a sound authority for proper conservation.

☆

The average prewar motorist could operate his car for 1000 years on the gasoline it takes to move an armored corps five miles.

—The Texaco Star.

Naval Reserves for Future War Needs?

JUDGING from some of the talk which has been current for more than 20 years and which is having somewhat of a revival now, the solution to the United States petroleum military needs of the future is the withholding from peacetime production of naval oil reserves. Even casual inspection of the facts show that to put dependence on such reserves would be folly.

Among the naval reserves of the country which have been widely advertised as a backlog in time of war is Elk Hills. Newspapers and magazines have devoted much space to quoting well meaning but poorly informed governmental individuals on how important Elk Hills is to national security. Certainly, Elk Hills is at the top of all naval reserves. Yet right now, with one of the largest concentrated drilling campaigns in the nation in full swing, Elk Hills production has been built up to only 50,000 barrels daily, and is scheduled to reach but 65,000 barrels daily by the end of June. It's a fine oil field.

Nevertheless, after more than three years of war and a serious crude oil shortage on the West Coast, this justly famous naval reserve is producing only one percent of the nation's domestic needs. In other words, it would take 100 Elk Hills to deliver the quantity of oil which private enterprise, building up through the years of intelligent and vigorous competitive effort, is contributing to the national needs. This is the way things now stand, although Elk Hills has the advantage of offering unusually shallow producing depths, less than 3000 feet. The shallowness of its pay sand makes it possible for a single drilling rig to complete an average of almost two new wells per month. No other current leading United States field has this advantage, and few naval reserves of the future will offer such advantageous conditions again.

Surely the answer is clear. No likely number of naval reserves can be depended upon to develop a large enough supply quick enough for our military needs. Development of an adequate supply during peacetime is the hope for the future, and only private enterprise offers a sufficiently competitive condition to assure they will be actually developed and available when needed.

☆

The present 200,000,000-ton annual production of petroleum is more than twice the country's output of steel, says the American Petroleum Institute.

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WASHINGTON ROUNDUP

By BERTRAM F. LINZ, Washington Correspondent

THE manpower problem was by far the most important subject developed in oil circles in Washington last week, with issuance by PAW of the instructions under which employers in the industry are to apply for the deferment of men between the ages of 18 and 30 who, on January 1, last were reclassified as II-A or II-B.

Thirty Percent Top Figure—Not more than 30 percent of such men now employed can be given new deferments under the stiffened regulations designed to increase the number of registrants available for induction into the military service, posing many questions of grave importance to all industries. Personnel officers who came to Washington for more complete information foresaw a lowering of morale among the 18-30 group, difficulties with the unions over the method of designating the most essential men and heaps of trouble in filling jobs which shortly will be vacated.

Anti-Trust Protection—The State Department's reluctance to give assurance in the Anglo-American oil pact that oil companies, acting under its provisions, will not subsequently face anti-trust suits, seems to be holding up final draft of the agreement although some progress is reported.

Gas Line Proposed—Another natural gas company prepared to meet the threat of new Middle-West gas shortages next winter by proposing immediate construction of a post-war project for a 1085-mile pipe line to move 145,500,000 cubic feet of gas daily from the Hugoton field, Oklahoma, to the Detroit-Toledo areas. (See page 64.)

Second Quarter Steel—WPB took final action on second-quarter steel allotments for industry, giving PAW 260,100 tons for oil country tubular goods which will provide for only 90 percent of the 6900 wells it has called upon the industry to drill during the three-month period. Outlook for the third quarter, currently, is that the supply picture will be no better, unless end comes to the war in Europe.

Patton's Drive and Oil—Oil was defended against charges that lack of fuel stopped General Patton's Third Army in its dash toward Germany last year, with Representative Hinshaw of California telling the House that the industry men who had been taken into the fuels and lubricants division of the QMC had done a wonderful job.

Foreign Refineries Busy—PAW reported that foreign refineries, exclusive of Russia, are contributing to the United Nations' oil war-fund all that they can under the handicaps of distance, difficult transport of needed equipment and supplies, and lack of tankers.

Ground Storage for Helium—The Interior Department is preparing ground storage for excess helium, piping it back into the field from which the gas originally came, and has selected the site, near Rifle, Colorado, for its plant to demonstrate the industrial possibilities of developing liquid fuels from oil shale.

Final Figure on Second Quarter Steel Shows 511,500 Tons for Oil Industry

Second-quarter allocations of carbon and alloy steel by the War Production Board for the use of the oil industry will amount to 511,500 tons, it was announced February 26 by Deputy Administrator Davies.

This will include about 260,100 tons for production of oil country tubular goods, sufficient to drill about 6200 wells, Davies said.

All Not Obtained

Representatives of PAW and other claimant agencies worked with WPB officials over a period of several weeks in an effort to secure the reservation of as much steel as possible for the drilling program (THE OIL WEEKLY, Feb. 12 and 26), but while they were successful in obtaining considerably more than originally appeared probable they could not get all of the 287,000 tons estimated to be necessary for the scheduled program of 6900 wells.

Mill capacity, it was found, simply is not available to produce that much oil country tubular goods and meet expanded military shell, bomb and rocket programs.

In the light of the inability to obtain as much new production of tubular goods as needed, PAW is calling upon the industry to drill the 700 wells not provided for under the WPB allocations with goods taken from such supplies as may be held in inventories.

Davies said that WPB allocations for the second quarter include the full 331,000 pounds of aluminum requested, and 5,245,000 pounds of copper, very close to estimated requirements.

WPB officials, meanwhile, disclosed that the steel situation is serious, due in part to manpower shortages and in part to severe weather which sharply reduced production after the beginning of the year.

This decline, combined with large increases in demands and in calls for immediate delivery, increased by nearly 1,000,000 tons the carry-over of past-due orders on the steel mills now foreseen for April 1.

This carry-over, it was explained, aggravated the second-quarter allocation problem, with requirements for the period estimated at 17,475,000 tons of carbon steel and 2,376,000 tons of alloy steel—a total of 19,851,000 tons, approximately 24 percent above the 16,050,000-ton supply foreseen by the steel division.

Outlook Clouded

"It was evident that drastic cuts in second-quarter allotments for exports, essential civilian and even military programs were necessary to hold the carry-over within bounds and maintain the flow of steel to critical programs," it was pointed out by Hiland G. Batchellor, WPB chief of operations.

"Allotments totaled 16,900,000 tons, 105 percent of estimated supply but only 85 percent of requirements. Much of this second-quarter steel, of course, is for third and fourth-quarter finished munitions, but it still will be difficult to meet even the reduced allotments for the second-quarter unless sufficient manpower relief is provided to insure that the steel production required to meet the curtailed programs is forthcoming.

"The outlook beyond the second quarter is less clear. If the war continues in both Europe and Asia, the deficit for the third quarter probably will be greater than that which we now face for the second quarter."

Underground Storage for Helium Planned by Government in Texas

Plans to use the 50,000-acre government-owned Cliffside natural gas field in Texas for underground storage of surplus helium were announced by the Interior Department March 3, thus returning it to the ground from which it originally came.

Since 1923, the Cliffside field has produced more than 17 billion cubic feet of natural gas from which helium has been extracted at the bureau's plant, and until the war was the chief source of the helium produced.

A 32-mile pipe line has been completed between the government plants at Exell and Amarillo, Texas, with connections to the Cliffside field, which is near the latter. Thus it will be possible to move helium from the Exell to the Amarillo plant for loading into tank cars and to carry excess helium from Exell to the field, where it will be injected under pressure into one of the eleven producing wells.

Although the helium piped back into the ground must be repurified later when it is withdrawn, the department said, the gas from the cache will be richer in helium content, the processing time will be reduced and there will be immediate supplies of gas on short notice.

Because of the value of the gas, special procedures were adopted in the building of the 2-inch pipe line, including the relatively new method of pressure welding and installation of a series of specially-designed valves to close the line automatically on each side of a break, activated by the sudden upsurge in flow from the predetermined rate. To guard against floods of the Canadian River, the line was split and parallel lines run across the river, each surrounded b ya 4-inch cement-filled pipe line.

Says Patton Slowdown Not Due to Gasoline Shortage

Charges that General Patton's drive across France last year was halted by lack of oil were flatly denied in the House of Representatives February 26 by Congressman Carl Hinshaw of California in a strong defense of the manner in which the fuels and lubricants division of the Army quartermaster corps has fulfilled its responsibility for supplying fuel to the fighting fronts.

Explaining that he had discussed the situation with prominent Army officers and studied reports reaching Major General Edmund B. Gregory, quartermaster general, Hinshaw told how the oil and gasoline for the Normandy invasion had to be ferried over from England to beachheads still under fire, and declared that while he was in no position to say what actually caused the slowdown he was convinced it was not solely to lack of gasoline.

Hinshaw told the House that an armored battalion requires 17,000 gallons of fuel and 215 gallons of oil to move 100 miles; heavy tanks burn 20 gallons of fuel an hour, a two and one-half ton truck four gallons and a jeep three.

During the fiscal year ended last June 30, the fuels and lubricants division arranged for the purchase of more than 1,000,000,000 gallons of gasoline, 50,000,000 gallons of engine oils, 3,000,000 gallons of gear lubricants and 50,000,000 pounds of greases, he said.

"Officers who are running the gasoline and oil supply establishment for the Army are, for the most part, experienced former businessmen who have been called upon to help the Army do its supply job," Hinshaw declared. "They are the ones who formulated these plans; they are the ones who are assuring that the plans are being carried out. The organization which has been set up to supply petroleum products to our ground troops—that is, the fuels and lubricants division of the office of the quartermaster general, under the direction of Brigadier General Howard L. Peckham—is an organization such as has never before been set up in the history of the petroleum industry.

"General Gregory has drawn upon the best brains of the petroleum industry, from large and small companies, to do the planning and executing of the supply function. More than 90 percent of the officers on the staff of the division came directly from the industry to the Army. These officers' experience with all phases of petroleum, from production right through to distribution, averages more than ten years each, and some of them have had as many as 25 years in the industry. No single company in the industry could command such a wealth of experience and sound business management as are assembled in this division."

Bureau Shows 23 Million Barrels Oil from Storage

Total demand for domestic crude last year—1,701,310,000 barrels—topped the production of 1,677,753,000 barrels by 23,557,000 barrels which had to be withdrawn from stocks, it was reported last week by the Bureau of Mines.

The bureau found that daily average demand during the year was 4,648,000 barrels, while production was 4,584,000 barrels and stock withdrawals 64,000 barrels. Total crude runs to stills amounted to 1,665,684,000 barrels, a daily average of 4,551,000 barrels.

Reporting on the current situation, the bureau said that preliminary figures show January demand was 4,720,000 barrels daily and indicate that demand in February may have run about the forecast 4,725,000 barrels daily.

For March a daily average demand of 4,742,000 barrels was forecast, comparing with PAW certifications calling for the production of 4,793,350 barrels daily.

Toluene Equipment

The Reconstruction Finance Corporation last week authorized the preliminary acquisition of machinery and equipment costing $5,000,000 for the $15,000,000 toluene plant at Lake Charles, Louisiana, which is to be operated by Cities Service Refining Corporation.

United Nations Refineries Keep Busy in War Effort

With few exceptions, all refineries of the United Nations outside of the United States and Russia, are operating at maximum capacity, it was announced February 27 by PAW.

In addition to the tremendous output of American refineries and the undisclosed production of those in the Soviet Union, 66 refineries in 22 United Nations processed 1,450,000 barrels of petroleum products daily in 1944, it was reported.

Shortages of tankers and the long hauls involved made it impossible to take full advantage of the potentialities of these plants in the early days of the war, but within the last two years the building up of the Allied tanker fleets have enabled the utilization of foreign crude production and refining facilities virtually at maximum capacity, Deputy Administrator Davies said.

The few foreign refineries that are not operating at maximum capacity are those that are currently undergoing repairs from bombing damage, those that cannot be supplied with sufficient quantities of crude or whose products cannot be moved because of the continued shortage of tanker transportation.

Much of the operation of overseas refineries has been carried on despite problems ranging all the way from shortages of food and drinking water to attacks on the plants by enemy bombers and submarines, Davies said.

Material and food supply problems have been complicated by shipping difficulties beyond the normal expectation of wartime conditions, and furloughs of personnel to the United States and England have been prohibited, some of the men not having seen their families since before the outbreak of the war.

Postwar Monopolies Would Be Prevented by New Bill

Legislation designed to prevent postwar monopolies in the oil and other industries, strengthening a 30-year federal prohibition against monopolistic mergers, was introduced in Congress last week by Senator Joseph C. O'Mahoney of Wyoming and Representative Estes Kefauver of Tennessee.

The measure would prohibit a corporation from acquiring the physical assets of another corporation where the effect of such acquisition would be to "substantially lessen" competition.

The existing law prohibits a corporation for acquiring another by purchase of its capital stock, where such action would reduce competition, but is declared by O'Mahoney and Kefauver to have left a loophole whereby a corporation can move toward monopoly by the acquisition of the property of competing corporations.

"Now that the country must begin to prepare for the postwar world, it must decide whether to maintain a free economy by maintaining a competitive system or, by permitting the trend toward monopoly to continue, invite the final step in monopoly, namely the complete absorption of business in government," they said in a joint statement. "It will be our intention to ask for early consideration of this legislation in the belief that it constitutes a first step in the rehabilitation of a free competitive economy in which little business can hope to survive."

State Department Hesitant About Anti-Trust Protection in Oil Pact

State Department apprenhensions that the formation of cartels might result from inclusion of an anti-trust provision protecting the industry against Department of Justice prosecutions for joint actions undertaken at the request of the government appears to be the stumbling block preventing completion of the revised Anglo-American petroleum agreement.

State Department representatives on the Cabinet Committee were represented this week as the sole hold-out against an anti-trust "umbrella" which all other members of the committee agree is essential.

However, after what was later termed a "very frank" discussion of the matter at a meeting of the Cabinet Committee February 27, the department representatives agreed to try to work out a clause which they think will provide the necessary protection without leaving any loophole through which cartels could crawl into the picture.

All the agency members of the committee were present at the meeting—State, War, Navy and Interior Departments, Foreign Economic Administration and PAW.

There were suggestions that the matter, the one provision on which full agreement has not been reached, might go to the White House for a decision by President Roosevelt. In that event, the President is expected to call on the Department of Justice for its views, and while the department has not yet been formally approached by the committee with request for approval of a specific provision it is understood to be sympathetic to the proposition in general.

In some quarters criticism was voiced of the State Department's position, and there is some thought that the department now is favoring having the problem of oil, as well as of other commodities, referred to the general economic council which is to be created under the Dumbarton Oaks plan, which will be a subject of consideration at the United Nations meeting in San Francisco late in April. However, President Roosevelt has evinced keen interest in the agreement as the blueprint for other commodity arrangements, and doubt is expressed that he would favor such a move after all the work that has been put upon the document by United States and English officials.

It is considered more likely that the perfection of the agreement, now under study in the State Department, is merely awaiting the return of the National Oil Policy Committee and the meeting of the PIWC March 14, when it is expected to be a major subject of discussion.

Keeton Named Assistant General Counsel of PAW

Appointment of W. Page Keeton, formerly of the University of Texas law school, as assistant chief counsel of PAW was announced March 1 by Deputy Administrator Davies.

Keeton, who joined PAW last September, was with the petroleum price branch of the OPA from June, 1942, to April, 1944, as chief counsel and thereafter served as division counsel of the OPA fuel division. He has been succeeded at OPA by Eugene D. Uman, formerly associate price executive of the petroleum price branch who joined OPA in May, 1942, after nine years experience in refining, transportation and marketing of oil.

Uman, in turn will be succeeded as head of the refined products section, one of his several assignments, by Carroll W. Johnson, assistant manager of the wholesale marketing division of The Pure Oil Company at Chicago.

Johnson, who has been engaged in the industry for 21 years, was divisional manager of Shell Oil Company at Honolulu at the time of Pearl Harbor. From October, 1942, to August, 1943, when he joined The Pure Oil Company, he served the PAW as district director of marketing in Chicago.

Texas Senator Withdraws Gas Conservation Bill

Senator Grady Hazelwood has withdrawn his bill providing for the proration of natural gas in Texas. Senate Bill 185 was urged by the Railroad Commission as a means of controlling gas production through proration to market demand.

There is still pending in the House the identical bill, House Bill 470, which was introduced by Representative Harley Sadler and others.

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED March 3	February 24
Alabama	250	250
Arkansas	82,100	82,200
California	901,450	901,750
Colorado	9,450	10,050
Florida	25	25
Illinois	206,000	205,800
Indiana	12,700	12,500
Kansas	244,400	272,850
Kentucky	32,100	31,100
Louisiana	363,500	363,250
North Louisiana	68,800	68,750
South Louisiana	294,700	294,500
Michigan	44,500	51,100
Mississippi	53,400	51,450
Missouri	100	100
Montana	22,700	22,970
Nebraska	900	950
New Mexico	104,750	104,750
New York	12,900	13,750
Ohio	7,200	7,250
Oklahoma	368,600	368,500
Pennsylvania	33,100	33,200
Tennessee	35	35
Texas	2,152,500	2,146,450
Upper Gulf Coast	562,050	562,050
East Texas Field	392,000	392,000
Rest of Eastern Texas	150,250	144,200
Lower Gulf Coast	246,650	246,650
Southwest Texas	79,900	79,900
South Central Texas	20,500	20,500
West Texas	464,350	464,350
North Texas	148,700	148,700
Panhandle	88,100	88,100
West Virginia	8,050	7,850
Wyoming	100,750	99,550
Total United States	4,761,460	4,787,680

French to Get Petroleum Through Lend-Lease Agency

Petroleum supplies to the value of $132,000,000 will be furnished by the United States to the provisional government of France under a lend-lease agreement signed by officials of the two countries in Washington last week.

The agreement covers only war supplies and material and articles and services connected with the war, including $150,000,000 worth of industrial equipment. Since much of the latter will be useful also in the postwar period, it is provided that delivery will not have to stop on them even though the war should end before they were finished.

Specifically excluded from the agreement are supplies, services and information solely for reconstruction or rehabilitation purposes, State Department officials explaining that supplies required by the French solely for postwar purposes will have to be handled by other means since the lend-lease act is, and is being administered as, a war supply measure.

The agreement calls for the supply of $1,675,000,000 worth of raw materials for war use and essential civilian supply, food, petroleum and short life manufacturing equipment for war production, etc., and $900,000,000 worth of rail and water equipment long-life machinery, etc.

Natural Gasoline Plants Authorized for California

Extensive construction activity in the natural gasoline branch of the industry in California is indicated by projects approved by the War Production Board, acting on the recommendation of the natural gas and gasoline division of PAW.

General Petroleum Corporation has been given the WPB green light for construction of a natural gasoline plant in Fresno County, to use product from the Helm and Riverdale fields, to cost between $1,000,000 and $1,250,000. Barnsdall Oil Company has obtained approval for building a pressure maintenance plant in the Newhall-Potero area north of Los Angeles in Los Angeles County, at a cost of $500,000.

Standard Oil Company of California will build a pressure maintenance plant for the Navy in the Elk Hills reserve at a cost of about $250,000.

Doheny, Los Neitos, Seaboard, Honolulu, et al, have been given approval for a $500,000 natural gasoline plant in the Coalinga nose oil field in Fresno County.

Oil Investigation Power Continuation Proposed

Legislation authorizing the House Interstate and Foreign Commerce Committee to continue its petroleum investigations, initiated some ten years ago by a group of committee members under the chairmanship of former Representative William P. Cole, Jr., of Maryland, was introduced in the House by Chairman Clarence F. Lea of California February 27.

The authority of the subcommittee under previous resolutions expired in January. Since Cole's resignation from Congress to become a member of the Customs Court, Lea has acted as chairman of the group.

Officers of New York Chapter Nomads

Newly-elected officers of the New York Chapter of Nomads are shown above as follows: Standing—C. R. Tunnell, International General Electric Company, treasurer; E. L. Carter, export representative, assistant treasurer; W. H. Siems, Hughes Tool Company, regent; H. J. McAdams, Jones & Laughlin Steel Corporation, sergeant at arms; G. V. Leece, Gardner-Denver Company, assistant sergeant at arms; J. W. Reed, The Cooper-Bessemer Corporation, assistant secretary. Seated—R. M. Dinges, secretary; E. H. Trammell, Mission Manufacturing Company, president, and W. G. Foster, Anglo-American Purchasing Company, vice president. Not shown is W. J. Campbell, retiring president, who was elected to the board of regents for 1945.

W. Alton Jones Selected as Head of Petroleum Institute's Aviation Group

Appointment of a committee on aviation, with W. Alton Jones, president, Cities Service Company, as chairman, and Bert I. Graves, vice president, Tide Water Associated Oil Company, as vice chairman, was announced last week by William R. Boyd, Jr., president of the American Petroleum Institute.

The new API committee will function in an advisory capacity on over-all policies and procedures on petroleum matters related to aviation.

"Postwar aviation development, and legislation affecting it, will be of tremendous interest to the petroleum industry," Boyd said in advising members of the committee of their appointment. "Safety, traffic control, taxation, aviation fuels and lubricants and likely numerous problems of engineering and technology are among the things that naturally suggest themselves as being of interest and concern. The future of aviation and its relationship, to the petroleum industry are very live subjects and it is to advise with respect to general policies of appropriate interest and proper concern that this standing committee is created."

Members of the committee are: Hines H. Baker, executive vice president, Humble Oil & Refining Company; Col. Thomas H. Barton, president, Lion Oil Refining Company; R. F. Bradley, Standard Oil Company of California; Paul G. Blazer, chairman of the board, Ashland Oil and Refining Company; H. E. Brandli, vice president, Cities Service Oil Company; C. C. Carpenter, Union Oil Company of California; J. W. Connelly, director, Standard Oil Company (New Jersey); H. W. Dodge, vice president, The Texas Company; James E. Dyer, vice president, Sinclair Refining Company Sylvester Dayson, president, Premier Refining Company; Walter L. Faust, vice president, Socony-Vacuum Oil Company; D. P. Hamilton, president, Root Petroleum Company; W. V. Hartmann, vice president, Gulf Oil Corporation; Charles F. Hatmaker, vice president, Pan American Petroleum and Transport Company; H. E. Hanson, Standard Oil Company (Indiana); P. E. Lakin, president, Shell Oil Company; Bernard L. Majewski, vice president, Deep Rock Oil Corporation; John W. Newton, vice president, Magnolia Petroleum Company; Will D. Parker, Phillips Petroleum Company; Arthur E. Pew, vice president, Sun Oil Company; M. H. Robineau, Frontier Refining Company; O. D. Robinson, president, Republic Refining Company; A. A. Stambaugh, vice president, Standard Oil Company (Ohio); C. B. Watson, vice president, The Pure Oil Company; Wayne C. Yeager, vice president, The Atlantic Refining Company; William S. Zenhrung, president, Pennzoil Company. Edwin S. Hall, chairman of the American Petroleum Industries Committee, and Baird H. Markham, director of the committee, have been named as ex-officio members.

Opposes Gas in Big Inch

A movement to prevent diversion of oil through the Big Inch pipeline to Eastern states after the war has been started by Representative Melvin T. Chambers of Columbia County, Arkansas. He proposed an agreement between the states of Arkansas, Louisiana Mississippi, Oklahoma and Texas, that these states should join in keeping oil at home for industries in their respective sections of the country.

Governor Thomas L. Bailey of Mississippi has endorsed the suggestion by Chambers.

Curacao and Aruba Using Disposal Pits for Residue

Refineries having petroleum residue of which they can make no use during the war emergency might follow the example of two plants in the Netherlands West Indies and store it in disposal pits from which it may later be partly recoverable, it was suggested last week by PAW.

One of the refineries at Curacao, it was explained, pumps the residue three miles through a pipe line to a pit formed by damming the end of a shallow valley, and another at Aruba pipe lines it two miles and pours it over an 80-foot cliff to a beach dyked on the ocean side.

Deputy Administrator Davies said that the question of what to do with emergency residue has long been a problem for refiners handling types of crude whose heavy fractions are unsuitable for inclusion in combat fuel oils such as "navy special" and other products used by the military, which are lighter than the ordinary grades of bunker oils which constitute the bulk of peacetime needs.

During normal times, use can be found ordinarily for almost every drop of product extracted from every barrel of crude, he said, but with wartime transportation facilities too crowded with more necessary cargo, the residue, less than 5 percent, cannot be used and is difficult to dispose of.

In the Near East, at Abadan, the residues are pumped back into the earth with the possibility that some day an appreciable amount will be recovered, but this cannot be done at Aruba and Curacao because of differences in the type of residue and in the subsurface structures.

Miers Named President Of Tulsa Chapter Nomads

The Tulsa Chapter of Nomads recently elected the following officers for the current year: Shep Miers, Southwest Supply Company, president; Don Hinderliter, Hinderliter Tool Company, vice president; H. M. Cooley, Bethlehem Steel Company, secretary-treasurer; H. F. Texter, Spang, Chalfant, Inc., sergeant at arms; Don S. Bowers, W. C. Norris Manufacturer, Inc., and H. M. Cosgrove, of The Purchasing Agents Association, regents.

Shep Miers

G. W. Walton, International Derrick & Equipment Company, retiring president, was presented with a gold-stamped pocket wallet.

Resumption of Rubber Trade

No time will be lost by the Netherlands government in rehabilitating the rubber industry of the Dutch East Indies, after liberation of these areas.

Already, it was disclosed in Washington last week, some $15,000,000 worth of rubber processing equipment has been purchased in this country, and it is hoped that smoked sheet rubber can be exported three months after re-occupation.

140-Mile Gas Line to Be Completed by September

United Gas Pipe Line Company will begin construction on the 140-mile, 24-inch natural gas and transmission line from Carthage, East Texas, field to the company's Sterlington compressor station near Monroe, Louisiana, as soon as approval is secured from the Federal Power Commission, R. H. Hargrove, vice president and general manager of the company, announced. Top priorities for construction were granted recently.

The line, to be completed about September 1, will transport gas to the Tennessee Gas and Transmission Company, which in turn will use it to supply the Appalachian area.

Approximately 100 million cubic feet of gas will be delivered daily to TGT.

Two measuring stations are to be located at the Carthage end of the line and two in the Monroe area. A telephone line and facilities approximately 140 miles long will also be built, paralleling the line and interconnecting with the company's communication system. Three river crossings are involved, one being the Sabine River at a point about 8 miles east of Carthage, another the Red River near East Point, Louisiana, and the third 9 miles north of Monroe.

According to Hargrove, the company proposes to operate the $7,000,000 line at an inlet pressure of 700 pounds per square inch guage at Carthage, and 500 pounds per square inch gauge discharge pressure at Sterlington. The line, however, will be designed to operate at pressures up to 1000 pounds per square inch gauge if desired.

Texas Commission Against Carthage-TGT Connection

The Texas Railroad Commission has announced that it will oppose with all its power any application for a pipeline from Carthage, the new gas producing area in East Texas, to hook into Tennessee Gas & Transmission Company's line from Texas to West Virginia.

Beauford Jester, one of the commissioners, declared, "We are going to do everything in our power to prevent the Federal Power Commission from granting permission to lay that interstate line just as we have on projected lines into Mexico and Canada." He was joined by Chairman Olin Culberson.

United Gas Pipe Line Company's proposed line would cross the Texas-Louisiana boundary and deliver gas to the Tennessee line at Monroe, Louisiana.

This is the first time the Railroad Commission has protested exportation of gas for use in another state. The case of Mexico and Canada referred to gas going beyond international boundaries.

Russell and Gonzalez Are Named to District 3 Posts

Joe H. Russell, Gulf Oil Corporation, last week was named a member of the crude oil supply subcommittee of the general committee of District 3. He succeeds John R. Suman, resigned.

R. J. Gonzalez, Humble Oil & Refining Company, was named chairman of the statistical subcommittee, replacing David G. Gray who also resigned recently. Gray, who has joined Humble, will continue to act as executive secretary of the general committee.

Synthetic Liquid Fuels Plant Plans

The first demonstration plant to be built for the Bureau of Mines' long-term investigation of the commercial possibilities of synthetc liquid fuels will be constructed on the Naval oil-shale reserve in the Anvil Points area, about seven miles west of Rifle, Colorado, at a cost of $1,500,000, it was announced last week by Secretary of the Interior Ickes.

The plant will operate in conjunction with an oil-shale research and development laboratory to be built at Laramie, Wyoming, to carry out that part of the O'Mahoney-Randolph synthetic liquid fuels act calling for research on oil shale.

Development of liquid fuels from coal will be conducted at a coal laboratory now under construction at Bruceton, Pennsylvania, on the bureau's experimental coal mine land, and bureau technicians are overseas studying recently captured German plants which made synthetic fuel from coal. A site for the coal demonstration plant has not yet been selected.

Ickes explained that the Rifle plant will include a 200-ton-a-day shale mine which can be enlarged if necessary, a 1½-mile aerial tramway to carry the shale to the plant, and crushing and retorting equipment of a capacity adequate to provide useful information on methods of operation and costs for private industry. A pilot-plant shale-oil refinery will be added later.

Overton Wants $100,000 to Finance Gas Reserves Investigation by FPC

An urgent plea for an appropriation of $100,000 to finance a Federal Power Commission investigation of the natural gas reserves of the country was made before the Senate Appropriations Committee March 2 by Senator John H. Overton of Louisiana.

Overton declared that the use of natural gas for industrial purposes is so tremendous that many fields will be exhausted in a comparatively short period. He cited as an example of the extent of the depletion that the Monroe field in Louisiana at the present rate of withdrawal has only a seven-year supply of gas.

Members of the committee were interested in Overton's presentation but decided to withhold action until the matter has been submitted to the Budget Bureau and passed upon by that agency.

Meanwhile the Federal Power Commission announced receipt of a third application for a major facility to supply the Middle West with additional gas, filed by the Metropolitan Eastern Corporation for construction of an 825-mile 18-inch line from East Texas to Ohio.

War Damage Insurance Is Continued for Another Year

The War Damage Corporation announced February 28 that all war damage property insurance then in force will be extended automatically for a period of 12 months from its expiration date without the payment of additional premiums or other charge.

Similar action was taken a year ago, made possible by the fact that during the period of the corporation's operations no claims have been submitted for damage by enemy action.

The War Damage Corporation began business July 1, 1942, and at the end of 1944 had on hand, after the payment of all expenses, premiums of approximately $221,600,000.

Federal Oil Taxes for January Register Gain

Revenue from the federal oil taxes ran close to $37,000,000 in January and were $15,000,000 more than collections for the corresponding month last year, it was reported by the Internal Revenue Bureau February 27.

Gasoline-tax collections for the month amounted to $28,919,880, against $17,-068,957 a year ago, the bureau announced, while receipts from lubricating oils amounted to $6,827,325 compared with $3,370,483 and pipe-line transportation paid $1,084,607 compared with $1,094,154.

For the first seven months of the fiscal year, revenue from the gasoline tax reached $231,924,319, an increase of $69,-231,720 over the $162,692,599 recorded for the corresponding period a year ago; lubricating oil receipts were $46,194,752 against $28,928,450, an increase of $17,-266,302, and pipe-line taxes were $9,-390,930 against $8,903,477, an increase of $487,813.

Order Excepts New Electric Lines for Oil Field Work

The WPB Office of War Utilities on February 27 imposed limitations on the construction of new electrical service extensions that can be made without specific approval from Washington, explained as necessitated by increasing manpower and materials shortages.

Most important of the new restrictions is one imposing a length limit of 5000 feet on extensions to various classes of industrial and commercial consumers, with an exception in in the case of extensions to operate electric motors for oil well drilling or pumping, for which blanket authority is given to use up to $10,000 worth of materials without regard to the length of the line.

Surface Gets Post

Standard Oil Company (New Jersey) announces appointment of Dr. Frank M. Surface as executive assistant to the president. He has been associated with the company for a number of years as coordinator of sales research, and prior to that time had the same position with Standard Oil Company of New Jersey. An authority on economics and author of many articles and several books on the subject, he was formerly assistant director of the Bureau of Foreign and Domestic Commerce in the Department of Commerce, from 1927 to 1933.

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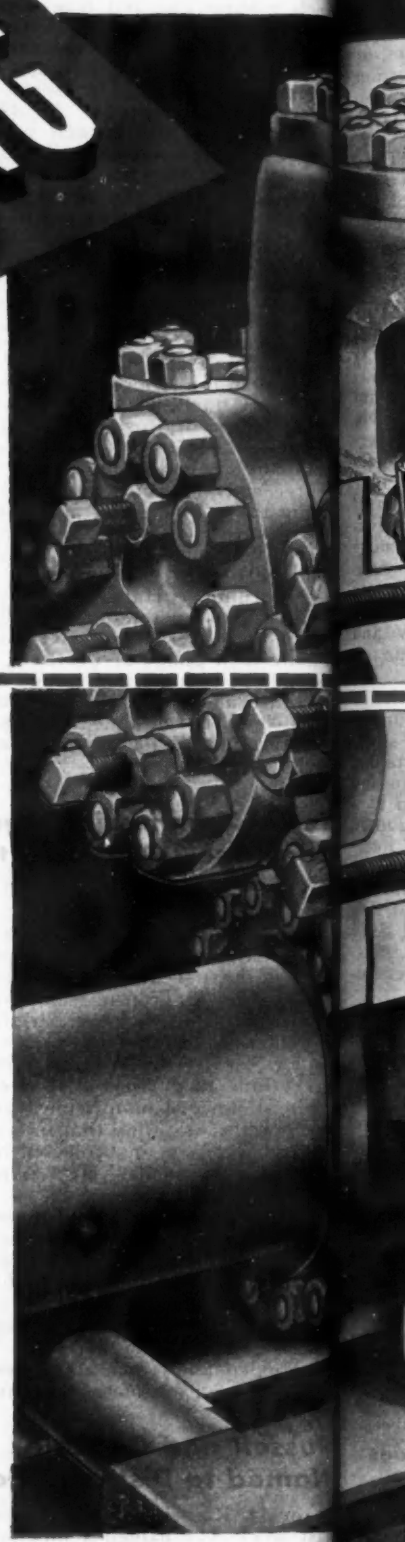

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Soundness of Schoch Gas Plan Questioned

University of Texas professor praises for research but some phases of his gas conservation-utilization scheme are said not practical or economically sound

ANALYSIS of oil and gas industry opinion regarding the Dr. E. P. Schoch natural gas conservation plan (page 28, February 19, 1945, THE OIL WEEKLY) indicates doubt as to whether the program recently promulgated by the University of Texas professor of chemical engineering would be practical and economically sound. Some points received general approval, while other features met with fairly wide opposition.

Since the Texas gas problem is very real and its proper solution urgently desired by all with the interests of the industry at heart, an attempt has been made by THE OIL WEEKLY to obtain the views of various men closely associated with the operation and economy of the gas industry with the object of arriving at a better understanding of the desirable and undesirable features of the proposal.

Briefly, Dr. Schoch summarizes his plan in these four points:

1. To exclude from estimates of market demand gas to be used in large quantities (such as 100 million cubic feet, or more, per annum) for purposes where lignite or other cheap fuels can be obtained; but this provision should not be used to decrease the total volume allowed for existing gas lines below the amounts they now carry.

2. Increase in prices for gas at the well to a figure at or near 10 cents, in accordance with market demand.

3. Increase in market demand by an effective program of industrialization aided by specific provisions for new industries, particularly those using clays, cotton, and natural gas itself as a material for manufacture.

4. Special technical study of gas such as used for carbon black and for lifting, which is now disposed of through other means than "common carriers," with view to reducing unprofitable or wasteful output of gas.

Dr. Schoch estimates current output of gas in Texas at 1.9 trillion cubic feet per year, of which 707 billion cubic feet should be classified as waste, waste meaning 2/5 of all gas used in lease operations, or flare gas, gas used for gas lift or jetting, and 4/5 of gas used in making carbon black. He proposes to eliminate all flare gas waste and all use of gas for lifting oil, and by forcing the use of cheap solid fuels such as lignite for large industrial users to cut their consumption in half. He would triple use by commercial and small industrial consumers by encouraging establishment of new small industries, this to be fostered and aided by research and investors institutes.

Without exception, men interviewed were unstinting in their praise of the work done by Dr. Schoch in the fields of chemical engineering and research. His method of manufacturing acetylene from methane, with subsequent manufacture of acetylene black was mentioned as being of great potential value to the gas industry.

Most operators interviewed were thoroughly in accord with the idea of preventing waste wherever possible, but some were skeptical as to the advisability of instituting regulations which would make it unlawful to flare gas regardless of conditions or to use gas in artificial lift of oil. It was pointed out that in such a program the Texas Railroad Commission must be given broad powers of discretion to make exceptions in such cases as fields largely depleted, producing at low ratios which would make it impossible economically to re-inject or to supply a market. In the case of lifting operations, the question was raised as to just how oil is to be lifted artificially. Operators question the advantage to be gained by using some other source of fuel together with extra pumping equipment at a time when the gas for such operations is available.

Price Proposal

Regarding the advocacy of an increase in the price of gas to a figure around 10 cents per thousand cubic feet, there was no dissension, although doubt was expressed that the Railroad Commission has any authority to fix the price of gas at the well, as was indicated in the proposal, or should be clothed with such authority.

The possibility of establishment of research organizations such as the "research and investors institutes" outlined in the proposed program met with favor. Oil and gas men fully recognize the value of such research to the industrial future of the state and so expressed themselves, but refused comment on ways and means of setting up and financing such institutions.

In advocating a ratable taking law Dr. Schoch has the hearty approval of the industry. It was pointed out that ratable production was the basic step in conservation of gas resources, and it was hoped that the Legislature will give the Railroad Commission clearly defined powers to prorate production equitably among producers in a field.

Expressions by industry men left no doubt as to the importance recently assumed by gas in the natural resources picture in Texas. They indicated they were aware of the fact that much gas is being flared which should be saved and utilized, and think that all Texas producers should take the attitude that gas is precious and should be saved wherever possible. And they mean gas being produced with oil as well as the gas from gas or gas-condensate wells. However, the general attitude of the industry at this time seems to be that the first step is the actual mechanical and administrative problems of stopping wastage of gas now being flared by stripping and storing it in reservoirs, or by making it fill a substantial portion of the pipe-line demand. They also pointed out the waste in popping large quantities of gas into the air after running it through gasoline plants. They hesitate to endorse any program of artificial alteration of the economics of the industry through selection of consumers and price setting.

Large and Small Classifications

One operator asked how it would be possible for the commission to distinguish between the small and large industrial consumer. Dr. Schoch speaks of large industrial users as those using quantities "such as 100 million cubic feet per annum," while the operators interviewed pointed out that many refineries use as much as 25 to 50 million cubic feet daily, and a heavy-duty steam drilling rig uses approximately a million cubic feet daily, or at the rate of more than 300 million cubic feet a year. Should they be required to use lignite or other cheap solid fuels, whose cost would be prohibitive and supply and transportation problems enormous, is the question.

Several operators took issue with the comparative analysis of costs of various fuels in Texas, questioning the statement that lignite could be obtained for 75 cents per ton at the source and delivered to point of consumption at a price of $2 per ton. Figures were quoted from the Bureau of Mines *Minerals Yearbook* showing that during 1940 Texas produced 606,418 tons of lignite, and under lower wage scales prevailing at that time cost of production averaged $1.05 per ton. To this must be added transportation costs of $2.25 per ton, according to those interviewed.

It was granted that there is a huge supply of lignite in Texas with somewhere between 50,000 and 60,000 square miles of workable area in a belt extending from southwest to northeast Texas with an originally estimated reserve of 30 billion tons. However, they reminded that Dr. Schoch, writing for the Bureau of Economic Geology on the geology of Texas, pointed out that industries dependent upon this fuel would have to be located near the source beds to save handling and transportation. It was estimated that 2 pounds of lignite would have to be handled for every pound of oil or gas to obtain the same amount of heat units.

Editorial Index to 1944 Issues Available Upon Request

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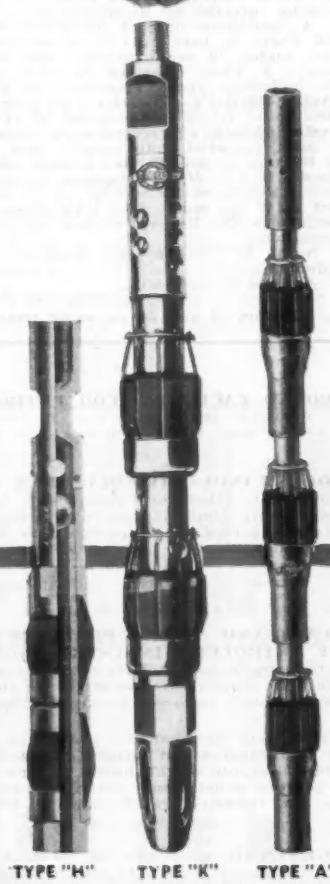

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Key-Man Deferment Plan Is Outlined by PAW

Deputy Davies warns industry that many men under 30 will be taken and urges prompt filing because number of recommendations depends upon the number of applications

DETAILS of the procedure to be followed by the oil industry in requesting deferment of men under 30 years of age were being mailed by PAW to petroleum companies and operators last week. The plan was accompanied by a letter from Ralph K. Davies, deputy administrator, which warned the industry it was going to lost many of the men it has been able to retain heretofore and which also urged that the matter of filing the new forms receive prompt attention.

It is absolutely essential that the industry adhere strictly to the procedure outlined, as this is the only medium offering any hope of deferment for any of the employes 18 through 29 years of age who were classified II-A or II-B on January 1, 1945. All previous deferment automatically expire on April 1. The necessary forms should be filled out immediately and sent to the Manpower Counselor, Petroleum Administration for War, Washington 25, D. C. Companies are urged to do this without waiting for the Selective Service Form DSS 42-A Special (revised) to become available. However, this form should be forwarded as soon as it becomes available at local Selective Service draft boards.

In his letter to petroleum industry employers, Davies declared: "During the next few months many men in this age group (18 through 29) who have been deferred previously will be called up for induction into the armed forces.

"The Petroleum Administration for War can recommend deferment of a limited number of the industry's personnel, but only if employers in the petroleum industry supply it with the information called for in the attached instructions. The number of deferments PAW can recommend is in direct proportion to the number of men whose names are submitted to it. Therefore, it is imperative that every employer affected report immediately."

The full text of the procedure for requesting deferment of petroleum industry employes, ages 18 through 29, as made public last week by PAW, follows:

Procedure for Occupation Deferment of Petroleum Industry Employes, Ages 18 Through 29

1. Purpose of The Plan

The increased personnel requirements of the armed forces now make it necessary that a large number of physically fit registrants under 30 years of age be inducted within the next few months. A plan has been issued by the Office of War Mobilization which will provide for the deferment of a small number of irreplaceable technical and professional employes as well as certain highly skilled workers. Under the terms of the plan it is *vital* that employers *show* on the list described in PAW Form 54 *every man* now in their employ 18 through 29 years of age who was on January 1, 1945 classified II-A or II-B, since the number of men PAW will be able to certify for deferment will be directly related to the total number of names contained in such lists. The plan applies both to domestic and foreign petroleum operations.

This plan establishes the following conditions, and employers must recognize that:

a. Only a limited number of men under the age of 30 can be *certified* for occupational deferment.

b. No man can be certified for deferment unless he is doing work that is indispensable in an activity that is included within the WMC of essential activities.

c. No such indispensable man can be certified for deferment if he can be replaced from less essential work within the plant or establishment or by recruitment from without.

d. Any such man shall be considered as *replaceable* if a recruit or transferee can be qualified to perform his work *through three months of intensive training.*

e. Men engaged in planning, research, development, or production for postwar purposes, shall not be certified for deferment.

2. Scope of The Plan

It is vital that employers engaged in activities over which PAW has jurisdiction comply *at once* with the following procedure since it is most unlikely that local boards will defer men in the age group, 18 through 29, unless there are on file Forms DSS 42-A Special (revised) endorsed by this agency.

Under the new procedure, all outstanding deferments of registrants, ages 18 through 29, will no longer be valid after April 1, 1945, and new Form DSS 42-A Special (revised) must be filed and certified if continued occupational deferment of such registrants is desired. Employers are urged to weigh the relative importance of registrants less than 26 years of age now deferred against older men in their employ whom they may wish continued in a deferred status. PAW can consider for endorsement the deferment of a limited number of registrants 18 through 29 who meet the conditions specified in Paragraph 1 above and who are employed in the industry branches specified in Exhibit 1 (shown herewith).

3. Type of Information Necessary

In order that PAW may have a basis for determining the number of men under 30 years of age employed in the industry branches listed in Exhibit 1 who are eligible for deferment, each employer must furnish PAW the following information as indicated:

a. A "personnel list," in quadruplicate, (see PAW Form 54 herewith) of all employes by name, under 30 years of age who were on January 1, 1945, classified as II-A or II-B (not including those classified in II-A(F), II-A(L), II-B(F), II-B(L), I-C, or IV-F, names to be listed in the order of the plant or establishment's preference for deferment, the most essential man coming first on the list. *Be sure to list all men in this age group classified II-A or II-B on January 1, 1945, since this will determine the number of certifications which PAW can make.* (See PAW Form 54 for illustration.) The list will contain the following information:

1. Name of company (or employer, if individual).
2. Address of company.

■ CONTINUED ON PAGE 58

(Forms 54 and 55 on same page)

Exhibit 1

Industry branches in the petroleum industry and related activities for which employers should submit personnel lists and occupational lists for registrants 18 through 29 years of age.

PRODUCTION (Oil and Gas)—Exploration; oil and gas well drilling (rotary and cable); oil and gas production; field servicing operations (including rig-building, cementing, shooting, acidizing, electric logging, treating, finishin tool operations, clean-out and work-over functions well-servicing operations; etc.).

TRANSPORTATION—Pipe-line transportation of crude and refined products (NOT including natural gas transmission lines which will be handled by Office of War Utilities).

REFINING—Refining of crude oils and related products; manufacture of all grades gasolines, refined distillates, residuals, lubricating oils and other finished petroleum products; including the compounding of lubricants whether as an integrated function of a refinery or performed in a separate establishment.

NATURAL GASOLINE AND RELATED PLANTS—Plants producing natural gasoline, condensate, liquefied petroleum gas and related products; field gas gatherings, boosting, cycling, desulphurization and dehydration facilities; and maintenance services necessary thereto.

DISTRIBUTION AND MARKETING—All activities involving the marketing and distribution of all petroleum products, including terminals, warehouses, bulk plants, jobbers, service stations, accounting, sales and lubrication engineering, repair shops, and selling personnel.

CONSTRUCTION OF APPROVED FACILITIES FOR PETROLEUM INDUSTRY—Companies engaged in construction of approved petroleum facilities, including pipe lines, refineries and natural gasoline plants.

MANUFACTURE OF PETROLEUM INDUSTRY EQUIPMENT—Manufacture of oil field equipment, laboratory equipment, refinery equipment, etc., (provided more than 50 percent of the man-hours are apportioned to production of equipment used in such activities). Also includes field equipment and service outlets.

PETROLEUM RESEARCH—Petroleum research and development companies.

PRODUCTION OF CHEMICALS AND ALLIED PRODUCTS USED EXCLUSIVELY IN THE PETROLEUM INDUSTRY—Production of chemical and allied products, including TEL, oil-treating compounds, catalysts and synthetic rubber raw materials (in the case of plants for which PAW previously endorsed Forms 42-A Special).

REPAIR SERVICES—Repair services necessary to the above petroleum activities, whether performed as an integrated function of a petroleum activity or in a separate establishment. Where repair services are an integral part of a petroleum activity, registrants should be included under that industry branch in which they are employed.

ADMINISTRATIVE AND GENERAL—Employes in this category should be allocated to the industry branch to which their work is most closely connected. However, if this is not feasible, make separate lists for this group.

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Can YOU Stay in the Oil Business in Competition With CO-OPS?

By JOSEPH F. LEOPOLD
The National Tax Equality Association

YOU in the petroleum industry are up against a new competition that will eventually put you out of business unless its streamlined growth is checked—and checked soon.

This new competition is the super co-operative movement. It is growing ten times faster than your privately owned companies can grow. A refinery that you might pay for in 15 years can be paid for by a co-operative in 2 years. In the past few years alone, co-operatives built or bought eleven big refineries, for which they paid $13,500,000.

They own producing acreage; they are drilling wells; they have pipe lines. They are selling 20 percent of the gas and oil used on farms, and they are getting into city markets at top speed.

In 1942, the petroleum co-operatives did $252,000,000 of business, and that was only a beginning. They plan now to dominate the business of the whole nation—in oil, in manufacturing, in banking, in wholesaling and retailing; in all lines of business.

More than that, their plans are already laid for an international oil cartel, to do business in 22 nations after the war.

How They Grow

Do you know how they have grown so fast—and how they expect to continue to grow even faster?

Mainly, at the expense of the treasury of the United States!

While you—and all other private industries—have recently been paying out most of your earnings in taxes to the federal government, the co-operatives have paid no federal income and excess profits taxes at all.

By a system of legal tax avoidance, which has been written into the laws of the land over a period of many years, these cooperatives have grown to be the biggest and most dangerous competition not only to your industry, but to all other industries in the nation.

Competent research studies show:

1. That federal tax subsidies which have been given to certain segments of business are discriminating against the American system of free enterprise and free markets, with a distinct threat to the continuance of the profit system.

2. That by both use and abuse present inequalities in taxation are seriously depleting the tax revenues of the national government at a time when every available source of income is required to pay for the war and for the expenses of government itself.

For many years the situation was not serious, from a competitive point of view. The tax rate was low. The differential enjoyed by the non-taxpayers was small. The co-operatives were small companies—little groups of farmers operating together locally, and operating on the true co-operative principle of returning their earnings to members in cash.

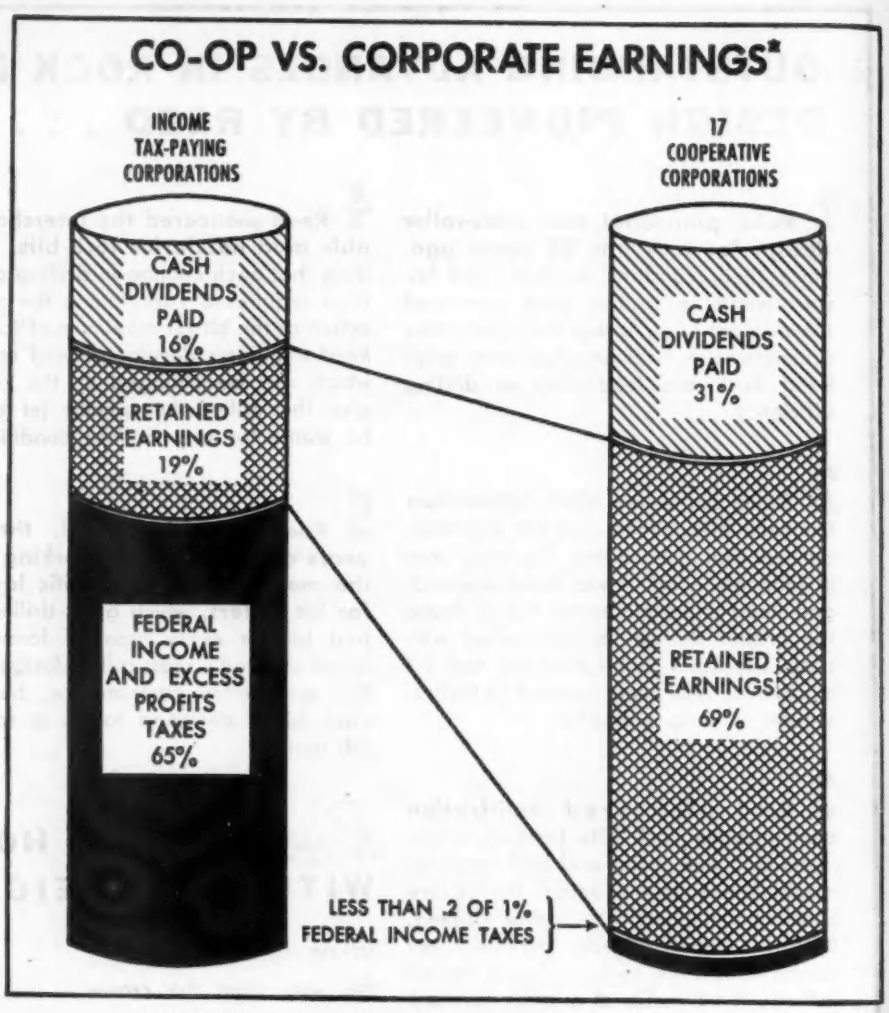
Furthermore, these little co-operatives were engaged in actual farm business, selling the farmers' produce and buying farm supplies. There was apparently no thought then of engaging in manufacturing, of drilling oil wells, of operating refineries and pipe lines.

It has been in the past ten years or so that the new form of super co-operative has come into the picture, pyramiding its earnings, buying out its privately-owned competitors, expanding into practically all lines of business and industry, and planning an actual dominance of the nation's economy and government.

Business men have no quarrel with the co-operative movement as such. They do demand that the co-operatives be compelled to play the game under the same rules that are imposed upon all other business; that they pay their fair share of federal taxes, and that in all other respects there be written into the law equality of opportunity and of justice. If the co-operatives have a superior way of doing business, they do not need the subsidies that they now enjoy.

Tax-wise, there are two ways by which equality among competing kinds of business might be brought about:

1. *By eliminating corporation taxes, thus putting the federal government in the position of relying almost exclusively on taxes*


CO-OP VS. CORPORATE EARNINGS*
INCOME TAX-PAYING CORPORATIONS
17 COOPERATIVE CORPORATIONS
CASH DIVIDENDS PAID 16%
RETAINED EARNINGS 19%
FEDERAL INCOME AND EXCESS PROFITS TAXES 65%
CASH DIVIDENDS PAID 31%
RETAINED EARNINGS 69%
LESS THAN .2 OF 1% FEDERAL INCOME TAXES

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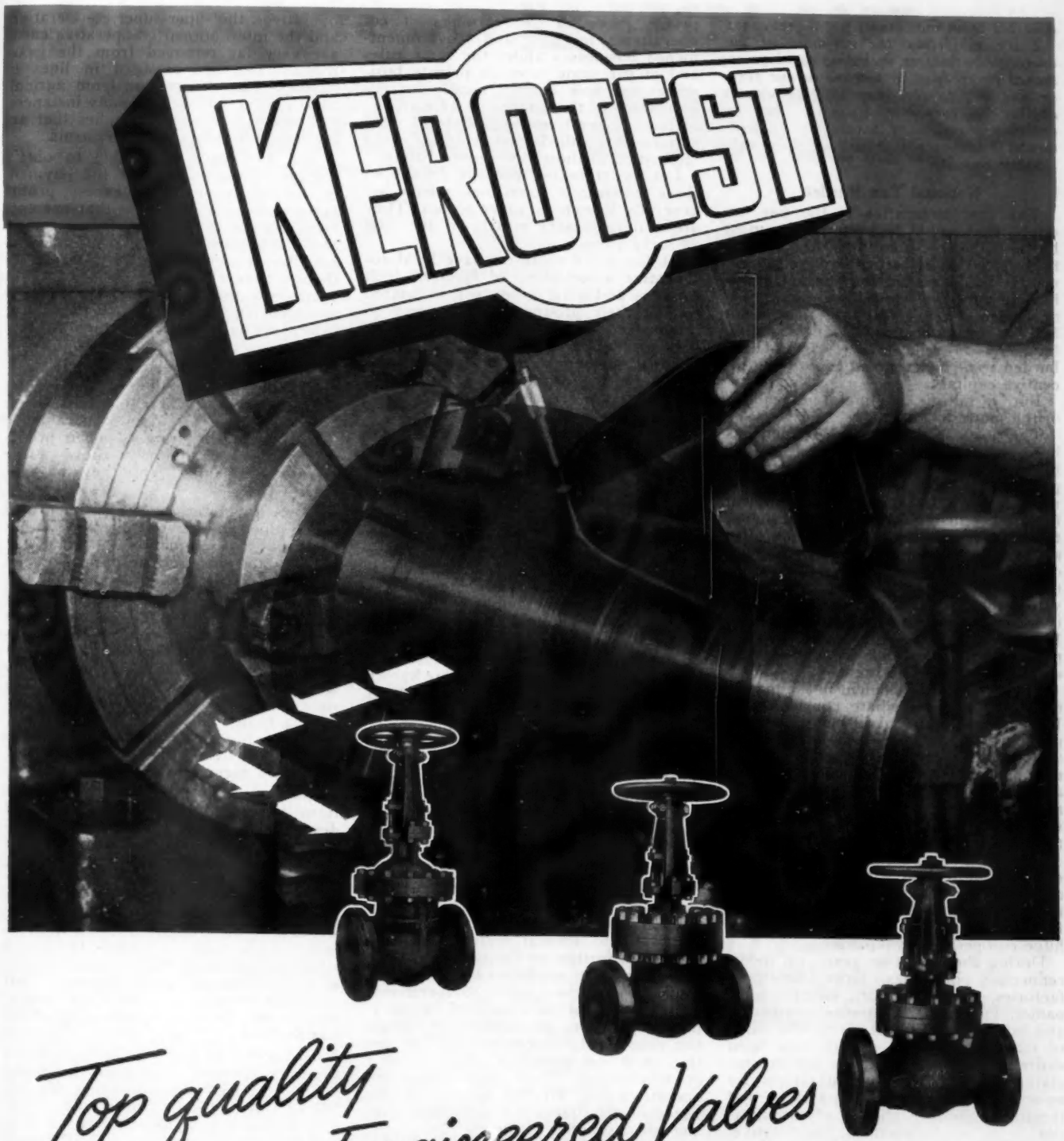
***On the basis of figures supplied by the Farm Credit Administration, the National Tax Equality Association presents this picture of comparative profit structures.**



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collected from individuals for its revenues.

2. By subjecting the earnings of co-operative businesses, including earnings returned or credited to patrons in one form or another, to the same tax system as applied to corporate business; and by evolving a system of taxation of governmental businesses that will produce substantive equality.

National Tax Burden

The first alternative is the one, no doubt, that would be preferred by most business men. Several of the postwar tax plans that have been suggested recently by tax-studying organizations have seriously proposed the elimination of the present corporate tax—though not for the purpose of achieving equality but only to relieve enterprise of the burden it now bears and to provide incentive capital.

But, meantime, we must be realistic in the matter.

The postwar national tax burden has been variously estimated at 18 to 25 billions a year. Inevitably, a substantial part of this sum must continue to be raised from business taxes. It is wishful thinking to believe otherwise. But unless those taxes are on a basis of equality among the various competing segments of business, we shall merely accentuate the present discriminations against private enterprise—and whether a new rate is set at 80 percent or 40, or 25 or even 10 percent, the spread between the tax-paying enterprise and the tax-exempt enterprise will be too great.

There is another element in the matter that calls for immediate consideration. It has been intimated in newspaper reports, that seemed to bear the authenticity of Treasury Department thinking, that no overall tax revision could be anticipated until the war in the Pacific, as well as the war in Europe has been won. That may be one year; it may be two years, or even more.

To continue present inequalities for even one more year will bring about the absorption or demise of many companies that will not be able to survive in the face of the tax-free competition of these huge co-operative companies.

During the past two years, oil fields, refineries, pipe lines, farm implement factories, grain elevators, electric companies, feed mills, insurance companies and many other industries to the value of many millions of dollars have been shifted from tax-paying to tax-exempt status through their acquisition by co-operatives and municipalities and through voluntary change of organization from corporation to co-operative. In many cases the change has been made for the avowed purpose of escaping the payment of federal income and excess profits taxes. And more and more companies will make the change—to evade their just share of taxes—in the coming years.

Taxing Called For

Thus there has come about an evil situation in which some businesses are taxed and some, in the same lines of operation, are tax free—a situation under which some businesses are slaves and some are free. This cannot go on. Therefore, we believe that the only realistic way to achieve equality is for all competitive businesses to be taxed alike, so that no one may have a substantial advantage over another. This calls for the imposition of federal income and excess profits taxes on the earnings of co-operatives, mutuals and government-owned businesses under the same rules and at the same rates as private businesses are now taxed. It calls for the imposition of those taxes on all earnings of the co-operatives, regardless of what earnings are called—and it calls for the imposition of those taxes immediately.

Let me trace for you the growth of these mammoth companies which are generally known as super co-ops. They are a development mostly of the past 10 or 12 years.

At the grass roots we have local co-operative associations of farmers, fruit growers and other producers, organized to sell their produce together and to buy needed supplies together. The members of these local associations are individual farmers and, except in occasional recent instances, the profits of operation are distributed to these individual members in cash.

These are the groups for whom exemption from payment of federal income taxes was originally written into the law. There is no evidence that Congress, in its frequent consideration of this exemption, ever contemplated the extension of this co-operative privilege to the mammoth companies that have taken advantage of it. In fact, there is ample evidence that many members of Congress expressly sought to limit the exemption to the local co-operatives.

However, there are now pyramided on top of these local co-operative associations larger companies that are known as wholesalers, or regionals, or super co-operatives. The members of these super co-operatives are not individuals. They are local co-operatives. Stock in the big companies is held generally by local associations. Dividends, of whatever kind they may be, are paid to these local associations.

Super-Super Co-ops

Some of these super co-operatives have grown in recent years to enormous size, with millions of dollars of assets and net worth and with profits that run from one to several million dollars a year. Still further up the pyramid, there have now been established national co-operatives — super-super co-operatives! The members of these national co-operative corporations are neither individuals nor ever local co-operatives. They are the super co-operatives—the regionals or wholesales. These super-super co-operatives are, for the most part, engaged in manufacturing and there is an increasing number of them.

For example, National Co-operatives, Incorporated, is engaged in the manufacture and distribution of cigars, cigarettes, cosmetics and various other products. National Farm Machinery Co-operative, Inc., is engaged in the manufacture of farm implements. National Refinery Co-operative is engaged in oil well drilling and petroleum refining.

There are ten of these super-supers, owned by 578 supers, which, in turn, are owned by 13,525 local co-operatives.

Beyond the super-supers, we have at the present time only one example, the International Co-operative Trading & Manufacturing Association, which has already been approved for operation after the war in 22 countries. It will engage primarily in the distribution of petroleum and food products.

Now the point is, that the super co-operatives, the super-super co-operatives and the international co-operative cartel are very far removed from the grass roots. They are engaged in lines of business that are remote from agricultural production and, in many instances, far removed from the supplies that are needed by farmers on their farms.

Yet they have been able to obtain complete exemption from the payment of federal income and excess profits taxes under the same law that exempts local groups of farmers, fruit growers and like associations organized and operated on a co-operative basis. And even though they claim no exemption, as is sometimes the case, they are able to make certain deductions which remove federal tax liability under present rulings.

Very Big Business

Actually, these great co-operatives are no more than very big business. Their volume of business is comparable to that of great corporations. Their profits are also comparable with those of big private companies. Yet they pay no federal taxes.

How have these great super and super-super co-operatives grown? It has been by a combination of legal tax evasion and tax-free accumulations of capital and reserves.

It is the basic co-operative principle, coming down from the beginnings at Rochdale a century ago, that the profits of the business are distributed to member-owners in cash. This would apply whether taxes were paid or not. If it were being done—if the super co-operatives actually did distribute their earnings in cash—these mammoth companies could never have grown at the rate that they have recently achieved.

But instead of making their dispositions in cash, they have devised and developed a plan whereby their payments of dividends are in pieces of paper—in certificates of preferred stock, or participation certificates—while the actual cash, including the very considerable amounts of money that should, we believe, be paid in taxes to the federal government, is added to capital structure and reserves. In other words, a co-operative is able to pyramid itself year after year out of federal tax money, and to buy out more and more of its competitors.

To explain to you just how rapidly a super co-operative can grow by piling up its tax-free accumulations, let me tell you about the Consumers Co-operative Association, of North Kansas City, and its various associates and affiliates.

Earnings From Oil

This Consumers Co-operative Association is the leading co-operative engaged in oil production, wholesale distribution and refining operations. CCA began operations in 1929 with 7 local co-operatives as members and $3000 capital. On August 31, 1943, its membership had increased to 749 local co-operative associations, and its net worth was given as $2,810,439.79. Total sales in 1929 amounted to $309,000. In 1943, sales had risen to more than $15,000,000 of which $8,158,419 was in petroleum products and automobile accessories. The association reported earnings of $668,062 in 1942, of which $477,961 (nearly 72 percent came from oil wells, pipe lines, refinery and other productive activities,

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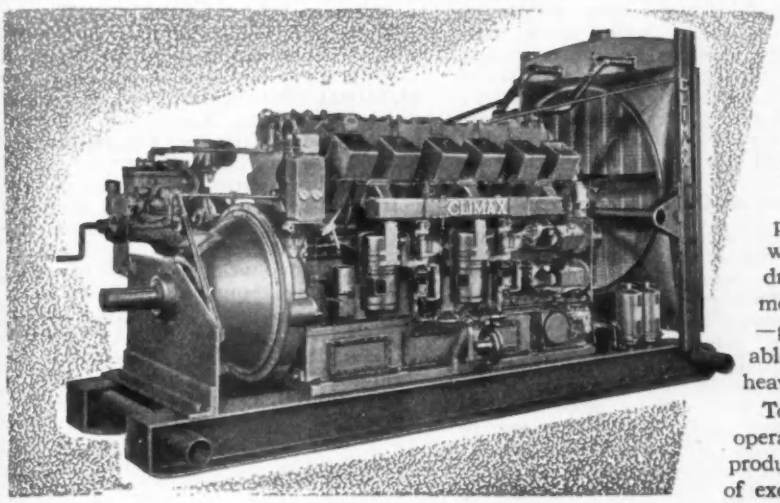

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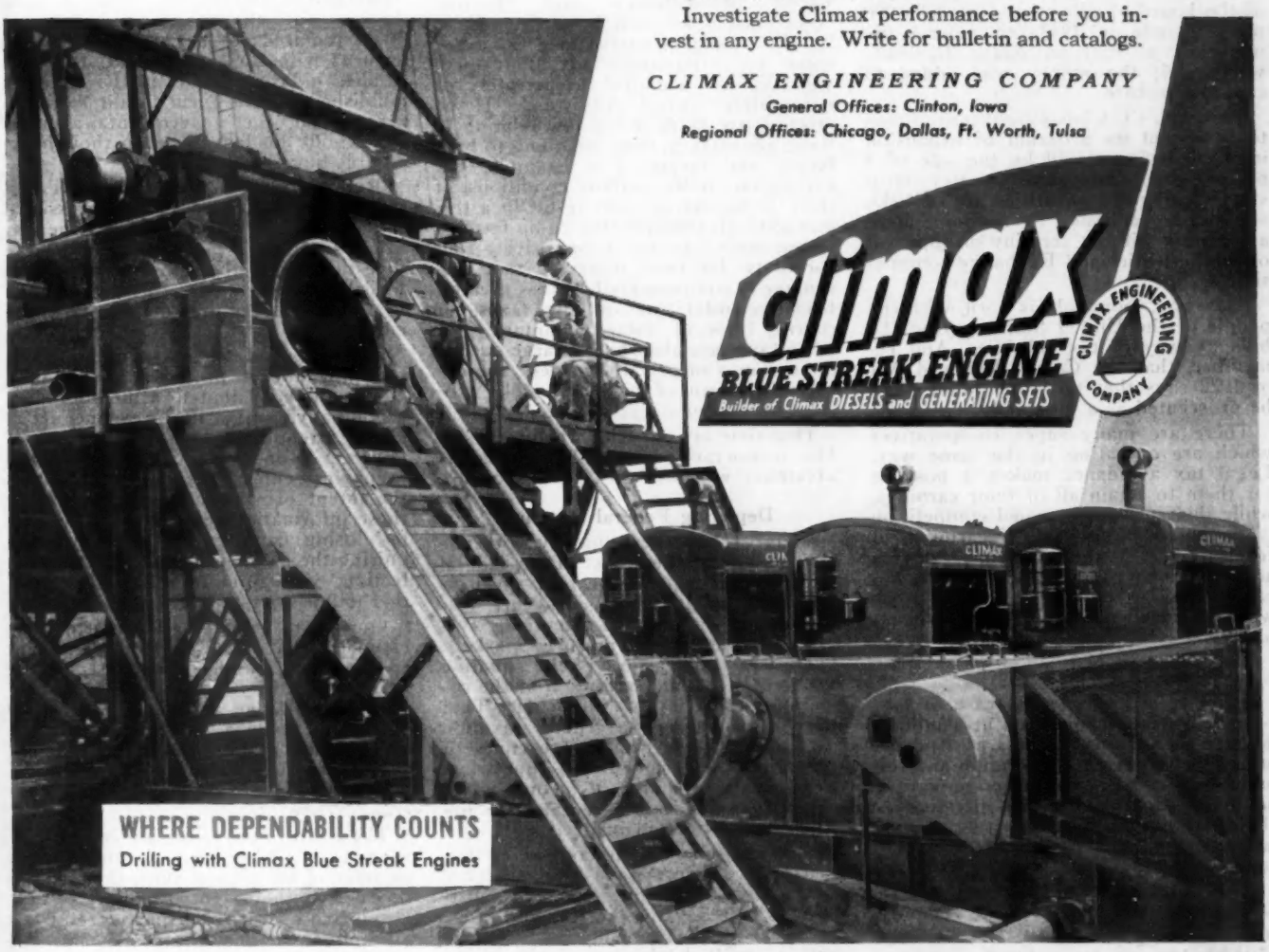

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and only 28 percent from wholesale distribution.

In 1943, the association's net earnings amounted to $766,363, of which $569,576, or 74 percent, came from productive activities. The association began as a wholesaler of petroleum products, and later added farm and home supplies and engaged in oil compounding. It has organized two subsidiaries and an affiliated company, which are engaged in producing, transporting and refining petroleum products. These subsidiaries own 3 refineries, 867 miles of pipe line, and 269 oil wells.

CCA built and placed in operation a 3400-barrel refinery at Phillipsburg, Kansas, in 1942. This refinery paid for itself out of untaxed profits in about two years. At the present tax rate, private business would have needed at least 15 years to pay for a like refinery out of profits.

The association's subsidiary later purchased, for $4,000,000, the 13,500-barrel refinery at Coffeyville, Kansas, and, for $750,000, a 1500-barrel refinery at Scottsbluff, Nebraska. It has a part interest in the former Globe Refinery at McPherson, Kansas, which was bought for $5,000,000.

"Monopoly Is Born"

By resolution in 1937, patronage refunds were deferred for a period of five years. In 1942, patronage refunds were again deferred subject to the discretion of the board of directors. On $2,250,000 profits made in 1942, no federal tax was paid; no cash patronage dividends were paid; the money was added to capital structure.

Recently, CCA has sought more funds to carry out its program of expansion in the petroleum field by the sale of 4 percent, non-cumulative, non-voting stock. Under the securities act of 1933, stock may be issued by a co-operative association without scrutiny or approval of the Securities and Exchange commission.

This way, monopoly is born, with the people of the United States paying the bills by way of tax subsidies. And remember, that the Capper-Volstead Act of 1922 says that no co-operative shall be prosecuted as a monopoly!

There are many super co-operatives which are operating in the same way. Legal tax avoidance makes it possible for them to retain all of their earnings, while their privately owned competition is paying a large part of earnings in federal taxes. At the same time, tax-free accumulations permit them to pile up capital and surplus at a rate that is without precedent in American business history.

Ten Times Faster!

Taking the hypothetical case of two companies, each capitalized at a million dollars, each doing business at a profit; one as a tax-paying corporation and the other as a tax-exempt co-operative, figures show that the co-operative is able to grow at a rate just ten times faster than that possible to the tax-paying corporation!

Independent business men in the South have recently been violently agitated by publication of the plans and prospectus of a far-flung "holding, financing and management" corporation of tremendous magnitude. The National Council of Co-operatives has named a group of Farm Security Administration employes in Arkansas as the originators of this plan, which calls for the organization of the Southern Consolidated Co-operatives, Inc., to operate in nine states from Texas eastward to Florida. According to the prospectus, this gigantic co-operative will engage not only in marketing operations, but will also manufacture some forty listed items, including prefabricated houses, mattresses, farm tools, sugar, wire, shoes, light bulbs, rugs, blankets, furniture, roofing, clothing, fertilizer, feed, glass, household hardware, cooking utensils, pottery, brick and tile, gloves, wagons, trailers, nails, tombstones, caskets, tires, alcohol, paint, naval stores and many others.

Start on Government Loan

It will set up its own lines of insurance, offering life, fire, and livestock. It will operate tourist camps. And it proposes to finance the beginnings of this colossal operation by borrowing from government some five to eight million dollars for forty years at 1 percent. Exempt from payment of federal income taxes, as it will be, you can easily imagine how rapidly this co-operative will grow—and how quickly it will become a complete monopoly in a section of the country where most tax-paying industries are still small and young.

Several years ago A. G. Black, who was at that time governor of the Farm Credit Administration, said: "Farmer co-operatives as such have been given by the people, through their Congress, some very important advantages—advantages not accorded to privately or corporately owned business. If no changes are made in the law relating to these advantages, they are going to bulk larger and larger. For example, tax exemption under certain conditions, if there is no change, will result in a tremendous advantage to the co-op form of organization. As taxes on private and corporate business increase, that advantage to co-operation becomes greater. Under conditions of low taxes, of course, it is of some advantage, but when taxes are absorbing a large part of the earnings of private business, the co-operative form of business really provides an enormous advantage."

That time arrived with wartime taxes. The co-operatives have that enormous advantage which Mr. Black forecast.

Depleting Federal Revenue

So far I have dealt mostly with the first of our contentions: That federal tax subsidies which have been given to certain segments of business are discriminating against the American system of free enterprise and free markets. There is another aspect of the situation involved in the tax exemption of the co-operatives that is also important: That present inequalities in federal taxation are seriously depleting the revenues of the national government at a time when every available source of income is required to pay for the war and for the expenses of government itself.

Here are some of the companies that used to pay federal taxes and are now co-operatives, exempt from responsibility to help pay for the war and other expenses of government, is no more than a small beginning—merely indicative of a trend that is now at work at an accelerated pace, with terrific potentialities to the destruction of the business tax base.

Globe Refining Company of McPherson, Kansas, is a 17,500-barrel refinery, which was bought by National Co-operative Refinery Association, at a price of $5,000,000. Cushing Refining & Gasoline Company, of Cushing, Oklahoma, was bought by Midland Co-operative Wholesale for $1,000,000, a price that Oklahoma oil men criticized as excessive.

National Refining Company of Coffeyville, Kansas, was bought by National Co-operative Refinery Association for $4,000,000. Petroleum Products Company of Chanute, Kansas, was bought by Missouri Farmers Association for $321,000. Terry Carpenter, Inc., of Scottsbluff, Nebraska, is one of the petroleum refineries bought by National Co-operative Refinery Association. The price paid was $750,000.

Recent announcements tell of other little and big companies that are about to become co-operatives, having always in the past been taxpayers. As a matter of fact, there would appear to be nothing in the law to prevent any big corporation that does at least 50 percent of its business with farmers from changing to co-operative form of organization and thereby evading its federal income taxes.

Information Now Available

How much federal tax do these co-operative corporations owe? Nobody knows. Until this year, they have never been required to file even information returns with the government. Research studies indicate that even the statistics published by the Farm Credit Administration and other governmental agencies are wholly inadequate, even though the figures have been staggering.

Right now in Washington, the Treasury Department and the congressional joint committee on internal revenue taxation are in the midst of an intensive investigation of the information returns filed by co-operatives—this year for the first time—as required by the last revenue act.

The ways and means committee wants to know and it proposes to find out. You man recall that in a memorandum accompanying the 1943 revenue act it called attention to the competition of tax-free co-operative corporations with taxpaying enterprises and said, "it is the intent of your committee to study these information returns with the view to closing existing loopholes, and requiring the payment of tax, and the protection of legitimate business against this unfair competition."

Our own research department has estimated that taxation of the petroleum co-operatives on the same basis as the petroleum corporations would have produced in 1942 an additional $10,000,000 of federal revenue. We have estimated the taxation of tax-exempt government projects in the electric field would have produced $93,600,000 of additional federal revenue.

These are sums that are worthy of attention. They are no more than samples of far greater sums that will be revealed as the potential liability of tax-exempt co-operative businesses. But tax exemption, serious as it is, is not the whole of the story of co-operative growth or co-operative plans. There are

■ CONTINUED ON PAGE 52

The Case History of a Super-Deep Oil Field

Forced to look to deep horizons for much future production, operators may find valuable data in record of Wasco Field

By ALEX N. CAMPBELL

THE rapid shrinkage of new and prospective areas for wildcat drilling in California is forcing the oil industry to turn to the possibilities of tests popularly known as "super deep tests."

Whether the future of such tests is bright or gloomy is, of course, contingent upon many factors. However, as far as actual facts and figures are concerned with the economics of such deep drilling, there is only one place the California engineer may turn, and that is to the case history of the Wasco field in Kern County.

World's Deepest

Wasco, 27 miles northwest of Bakersfield in the San Joaquin Valley, is the deepest black oil field in the world. In Louisiana there is a gas-distillate field which produces from a horizon several hundred feet below Wasco, but so far as black oil is concerned the California field is considerably deeper than any other.

Then, too, for study, Wasco has the advantage of being past middle age in productive life.

The field is rather small, having 385 acres considered productive. It is entirely drilled up with 12 producers for a well density of a well to each 32 acres. This spacing is much larger than is the practice in most California fields.

On the average, wells in the field are 13,130 feet deep. The productive horizon varies in thickness from 25 to 40 feet. The sands are permeable, averaging 300 millidarcys, and going as high as 2000 millidarcys. Porosity ranges from 11 to 24 percent.

The field was discovered in April, 1938, by Continental Oil Company with its famous KCL A-2. This well was the first drilled to 15,000 feet and until last year was the deepest in the world. Its total depth is 15,004 feet.

May Test Deeper

KCL A-2, after reaching its record depth, was plugged back and completed in an interval between 13,095 and 13,130 feet. Oil showings were logged below this depth but, so far, they have not been tested. The well, however, is cased all the way to bottom and Continental Oil Company is now considering re-entering the hole and testing the shows from 14,000 feet down.

However, from the 35 feet of zone open to production, KCL A-2 made an initial production of 3385 barrels daily of 37-gravity oil. After completion it flowed for 4 years and 8 months. In December, 1942, it was put on the gas lift and continued so until the middle of 1944, when it became necessary to place the well on the pump.

The last figures showed the well making a gross production of 900 barrels daily, of which 330 barrels was oil. The pumping equipment being used is a standard centrifugal submerged electric pump. It is hung at a depth of 5400 feet or 7730 feet off bottom.

Economically speaking, the well has made only a fair accounting of itself, although it has done better than any other in the field.

It cost $370,000 to drill. On January 1 of this year it had produced 420,000 barrels. At an average price for Wasco oil of $1.25 per barrel, the well has taken $525,000 out of the ground. It is estimated that KCL A-2 can perhaps return another $200,000 to $300,000. If the estimate proves correct the total return for the well will reach between $725,000 and $825,000. Of course, the above figures are gross and do not consider royalty, productions costs, etc.

As a general summation of the economics of KCL A-2 it appears that while it will return something more than the capital investment, it can not be considered a "good well" in the usual sense of the word. Still it is better than the average well at Wasco.

Total Output

Total production from the 12 wells in the field is slightly over 3 million barrels. This means about $3,750,000 has been recovered by the three operators in the field. Standard Oil Company of California with 7 wells, Continental Oil with 4 wells, and George F. Getty with 1 well.

The average per well recovery is now 250,000 barrels or $312,500. Estimates indicate the field may ultimately yield 5 million barrels or $6,250,000. If this recovery is realized the average production per well would be approximately 417,000 barrels, at current prices worth about $521,250.

A conservative estimate of the cost of developing the field's 12 producers and three dry holes is $4,000,000. If a value of 50 cents per barrel is taken as the probable value of the oil after reaching the surface of the ground, the ultimate return in money appears to be in the neighborhood of $2,500,000. There are those who might argue with the 50 cent valuation figure but even if it were adjusted upward 25 cents per barrel the field could not be classed as commercially successful.

This is true in spite of the fact that Wasco has been developed and produced under almost ideal conditions. Three-company ownership has put the field in a rather unique position among California pools. It has allowed production to be controlled to the best advantage of the field. Under California's voluntary production control arrangement this is not always possible.

However, in the case of Wasco the average well has already yielded 260 barrels of oil per acre foot of productive horizon. The field is expected to yield 435 barrels per acre foot. On the acre foot basis Wasco has been and is expected to be a very good California field.

Low Recovery

Looking at the situation another way, however, the field's per-acre recovery is at present only 8000 barrels and at exhaustion is expected to reach about 13,000 barrels per acre, from its average zone thickness of 30 feet. This recovery is a rather low figure for most California fields.

Combining all the data, it can be said that Wasco is **almost** an ideal field. Its sand conditions are excellent, its water drive tends toward high recoveries, operation conditions have been ideal, and all of these factors are pointing toward a fine job of getting the recoverable oil.

Wasco's only drawback is that it is just too deep to pay out on a dollars and cents basis. Its case history sounds a warning to other companies contemplating these super deep tests.

The experience at Wasco would suggest that drilling to such extreme depths demands reservoir characteristics assuring above-average per acre returns, if it is to be counted upon for an economically successful outcome. Also, in California, at least, present levels of crude prices may be too low to justify risks inherent in drilling to depths as remote as three miles.

Gas Measurement Course To Be Offered in April

The Office of Defense Transportation has ruled that the southwestern gas measurement short course does not come within the scope of government restrictions on conventions and the general committee announces it will be held at the University of Oklahoma, Norman, Oklahoma, April 17-19, inclusive.

Because of war conditions the short course was cancelled in 1943. During 1944 demand for the course became so great that the general committee gave its approval and the 19th annual southwestern gas measurement short course was held in June of that year and was attended by 524 ranging from metermen to company executives. A number of officers of the armed forces charged with the responsibility of gas measurement and distribution registered for the course.

Railroads Oil Pacific War With 'Symbol' Schedules

SO FAR in this war, our military and essential civilian needs for petroleum and its products have been met, thanks to the petroleum industry, the railroads, the tank car-owning companies and the government. But what will happen as the war emphasis is shifted more and more to the Pacific? Will it be possible to keep oil flowing westward in the enormous quantities which will be required?

The answers to these questions will be found largely in a plan which has been in effect since August, 1942. This plan, worked out by the railroads and the government, deals with the operation of "symbol" oil trains—large solid blocks of tank cars running on fast schedules.

It is this plan, together with the cooperation of all concerned, that saved the day when the critical oil shortage developed in the East shortly after the outbreak of war. This same plan is ready to meet the demands as they increase in the West. But that is getting ahead of the story.

In the fall of 1939, the rumblings of another world war reverberated in the United States as Hitler introduced his reign of terror to an unsuspecting world. As export trade and domestic commerce skyrocketed, the railroads' transportation job began to grow by leaps and bounds. By October, the railroads were carrying their heaviest traffic since 1929, the prewar record year.

Then, in the summer of 1941, an important part of that transportation load took definite shape with the loan of 50 tankers to the British to help replace those lost through enemy action. That loan quickly created a shortage of some 175,000 barrels of oil a day to our Eastern Seaboard.

Matter of Tank Cars

At that time, the railroads were not accustomed to transporting a heavy volume of oil to the East—they were moving around 11,000 barrels a day. But an additional 175,000 barrels of oil a day were badly needed by the hard-pressed East, and the railroads were called upon to get them there.

To the railroads, this meant that they would have to load 850 tank cars of oil in the southwestern producing area every day and start them rolling toward eastern territory, 2000 miles away. Where were these tank cars coming from?

Out of approximately 150,000 tank cars of all types in service in the United States at the time, only about 9000 were railroad owned, and most of these were being used to haul fuel for the oil-burning railroads of the West. The other cars belonged to the oil companies and private tank car lines. The only connection that the railroads had with the movement of these cars was to furnish the tracks and the power to pull them.

The next question was: Would the tank cars be able to stand up under such a long journey, particularly if they were operated at faster than normal speeds? More than 135,000 of the privately-owned cars were of an average age of 18 years—a little old for such a grueling journey. However, after some deliberation, 20,000 tank cars were allocated to do the job, and the railroads went to work.

How well the railroads met the situation will be seen from the fact that by September, 1941, they were delivering a daily average of 90,000 barrels of oil to the Atlantic Seaboard. This increased to 135,000 barrels a day during the next two months.

In November, Great Britain returned the tankers she had borrowed, and by the end of the month, the flow of oil by rail to the East had ebbed to 60,000 barrels a day. It seemed that the emergency had passed, but, in reality, this lull on the eve of Pearl Harbor only prefaced the real oil emergency that burst forth after the Jap attack and our declaration of war.

Problem Arises Anew

The new year, 1942, saw many of our oil tankers being converted to direct war service. Enemy submarines roving our coastal waters made tankers their particular targets. The exigencies of war caused oil to travel overland, and once

At top of page—Typical of the job which American railroads are doing and have done in the movement of crude and refined oils is this string of tank cars moving via the Erie Railroad along the Delaware River to the Eastern Seaboard.

Railroad yards have been piled with tank cars shuttling back and forth in record movement of oil as required by war and civilian uses. (Above, Pennsylvania Railroad photograph.)

more the railroads were faced with the problem of meeting the transportation requirements of an accelerated petroleum production.

In February, 1942, the railroads were handling an eastern petroleum volume more than double that of the prewar emergency at its height. And the volume was steadily rising. More tank cars were needed if the railroads were to keep pace with the increased demands.

Meanwhile, the car service division of the Association of American Railroads in Washington, D. C., created a special tank car section to deal with the situation. Soon after the section was established in April, 1942, every available car of the precious tank car supply that could safely be assigned to the eastern movement was in service.

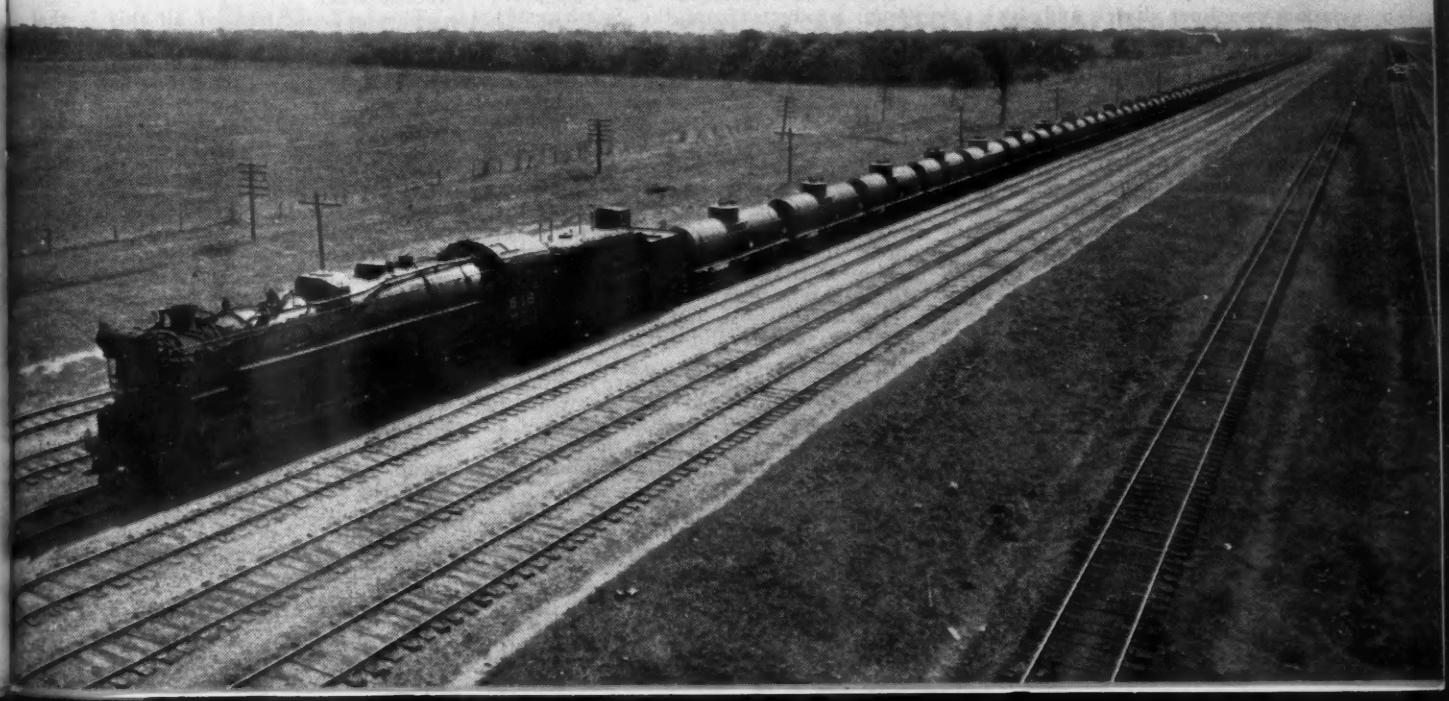
The 700,000-barrels-of-oil-a-day mark was reached and passed in May, 1942.

With wartime material restrictions barring any appreciable increase in the tank car supply, it was decided that the solution lay in getting more work out of existing cars. Through the tank car section, shipments were organized into trainlot quantities wherever it was possible. Then, for the first time, "symbol" oil train schedules, established by the Office of Defense Transportation, began operation.

In many cases, little difficulty was experienced in setting up daily trainlot schedules where petroleum shipments were moving in volume from common production points to consuming areas. The petroleum industry voluntarily arranged to move these shipments over a minimum number of routes, thereby eliminating excessive traffic over any one railroad or group of railroads. It further helped by increasing and improving loading and unloading facilities.

Schedules were set up by the railroads indicating the number of hours needed to move a "symbol" train over each route from origin to destination. Each route was given a number, or "symbol," which covered the entire line and schedule from start to finish. Each train was identified by the "symbol" it carried from the time it was assembled for its run until it was broken up at destination. These trains, returning over the same routes they had traveled, continued to be so identified, and each "symbol" indicated whether its train was going or returning. By this simple

West Texas contributes its share of oil to the war effort. This picture was made along the right-of-way of the Texas & Pacific Railroad.



The Baltimore and Ohio Railroad's four-power diesel unit is shown in the above photo pulling a string of oil tank cars long headed for war or essential civilian needs.

practice, it was possible to keep track of any train throughout its entire movement.

With "symbol" oil trains in operation, the eastern movement of oil by rail was stepped up. In June and July, 1943, the railroads set another transportation record as more than 1,000,000 barrels a day —almost 75 percent of the East's requirements—poured into the Atlantic Seaboard by "symbol" trains. The peak had been reached.

From then on, the eastern oil-bearing job of the tank car gradually relaxed as the Big Inch and the Little Big Inch pipelines began to carry their part of the load. By September, 1944, the railroads' oil-hauling job to eastern territory had declined to an average of 530,000 barrels a day. But the railroads had averted an eastern oil shortage, and the danger that threatened was past.

In the meantime, almost unnoticed in this rush of events was the fact that on March 15, 1944—almost two years after the first "symbol" train was scheduled to the East—a "symbol" oil train began its first run from the Texas fields to the Pacific Coast.

In the early months of 1943, approximately 800,000 barrels of crude oil a day were being produced on the West Coast. Into this area, there was a small tank car movement comprising a daily average of 7000 barrels of oil components to be used in the production of high-octane aviation gasoline, diesel and fuel oil. Slowly this transportation job gathered momentum.

By the fall of 1943, the railroads were being charged with the responsibility of getting a daily average of 40,000 barrels of these essential products to the Pacific Coast from the fields of Texas and Oklahoma. This assignment had reached almost 54,000 barrels a day when the Allies invaded the continent of Europe on June 6, 1944.

With the West dependent primarily upon the railroads for transportation of petroleum products, a marked increase in the volume carried by "symbol" trains occurred last July. During that month, the railroads moved a daily average of almost 79,000 barrels of components to meet the demands of a war that was being stepped up in the Pacific and to help replenish dwindling oil stocks on the Coast.

As this is written, more than 130,000 barrels of petroleum products are being carried westward every day by "symbol" oil trains. How great the demands may become before an Allied victory in the South Pacific has already been forecast. Available estimates indicate that the railroads may expect to see this movement average between 170,000 and 180,000 barrels a day—about 7,500,000 gallons—before the peak is finally reached.

Eastern Movement Continues

At the present time, in spite of the greatly improved eastern situation, tank cars are still hauling throughout the United States almost as much oil as they moved to the East during the peak period. The reason for this is that the railroads are being called upon more and more to handle traffic of the smaller oil producers not served by the direct routes of the pipelines and the tankers.

Within the last ten months, the railroads have placed not less than 5000 tank cars in short-haul service. This was done in an effort to accommodate oil producers affected when tank trucks experienced an acute tire shortage.

Since the first of the year, some 12,000 tank cars released from the East have been placed in western service as the need increased. Now more than 15,000 tank cars are engaged in carrying petroleum products from the Southwest to the Pacific Coast.

So far, the volume of oil which "symbol" trains are hauling in the West has not approached the tremendous oil loads they were called upon to move to the East. Nevertheless, the transportation job is no less difficult.

Operating over only nine lines of seven different railroads, these western "symbol" trains must carry their cargoes through deserts and mountains alike. Even so, they manage to equal the 200-mile-a-day average set by oil trains to the East, and they maintain an average turn-around time of less than 20 days.

Today, "symbol" trains are hauling oil faster than any other regular class of freight is moving. They are playing an important part in helping the railroads meet the nation's wartime transportation demands.

Never before in the history of this country—nor in any other country, for that matter—has the transportation job been so tremendous. Since the beginning of the war, the American railroads have been turning out mass transportation on a scale unequalled by any form of transportation anywhere in the world. Not only have they been moving approximately four fifths of the total increase in the nation's freight since war broke out in Europe, but they have also been handling more than 70 percent of both the freight and passenger business of the country.

Take, for example, what the railroads have been doing this year. In the first eight months of 1944, they turned in more than 497 billion ton-miles of freight service—or 3.9 percent more than in the corresponding period of 1943 and 147 percent more than in the same period in 1939, the last year of nominal peace in the world. They hauled during this eight-month period about 69 percent more freight business than they did in the same time in 1929, the freight record year prior to the present war, and 94 percent more than in the corresponding period in 1918, the peak traffic year of World War I.

Passenger Load, Too

On the passenger side also, the railroads have carried unprecedented loads. During the first eight months of 1944, they performed more than 64 billion passenger-miles of transportation service—or 13.9 percent more than in the corresponding period in 1943 and 327 percent more than in the same period of 1939. This eight-month performance was also 104 percent more than in the corresponding period in 1920, the high passenger year prior to this war, and 124 percent more than in the same period in 1918.

A large amount of this transportation service, of course, was for the armed forces and other departments of the government. For example, the railroads are handling 97 percent of all organized troop movements, and are moving almost 90 percent of all Army freight and express. From December, 1941, through August, 1944, they carried for the Army alone approximately 24,250,000 troops in special trains and special cars, and hauled more than 190 million tons of freight and express. This was about three times as many troops and about seven times as much freight and express as they moved during the entire 19 months that America was in the first World War.

The amazing part of all this is that the railroads are doing this much bigger job with actually less equipment and far fewer employes than they had in the last war. In fact, the railroads today have about one fourth fewer freight cars, one third fewer locomotives and nearly one third fewer employes than they had in 1918.

The reason the railroads are doing so much more with so much less is that they are better railroads all around. Moreover, there is more and better cooperation not only between and among the railroads themselves, but also between the railroads and the shippers and receivers of freight and the government.

These better railroads and this teamwork will enable the railroad industry to continue meeting all of its wartime responsibilities. The transportation job ahead will be difficult, and it will require the best efforts of all concerned, but the railroads will see that it is done. There will be no slowing down, no letting up on America's railroads.

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Controlling Movement in Water-Flooding

THE engineer, laboratory technician and operator actively engaged in supervision or control of water-flooding operations have as one of their prime objectives the development of procedures and methods whereby an oil sand within any flood pattern may have all sections of desirable oil saturation flooded out at the same time.

To emphasize the complexity of this problem it should be stated that the variable limits necessary for a mathematical solution are unobtainable and that success attained to date is somewhat of a trial and error nature. This is so because in any flood project the only sand data known prior to operations are those obtained from a few core analyses that altogether cover only a few square inches out of many acres of the sand under flood.

Complex Picture

To further complicate this meager data, the sand itself is a porous rock formation consisting, usually, of many differing permeability values, both horizontally and vertically. Shale layers, variable sand thicknesses, swelling cement material, variable chemical composition and different wetting agents and other factors add their disruptive part to an already complex picture.

The general picture then is one of not knowing definitely what sand conditions are one foot or 100 feet from the core well, and that the operator is trying to flush a sand of oil with water; or trying to move both fluids through a sand of widely varying composition. A certain degree of success is bound to be attained if conditions are acceptable to flooding, but actual control of the flood front is very difficult and most certainly is a field for development. It may be said, however, that by comparison of core analyses, laboratory experiments and actual field results, certain statements and predictions of an empirical nature are being developed and accepted by the industry to good advantage.

Basically, the problem in water-flood movement control is that of attaining a vertical flood wall and radial movement of injected water throughout the pattern. The former is receiving most of the industry's attention at present and it is doubtful if much progress can be made on the latter.

Governing Factors

The efficiency, and as a rule the profit, of any potentially successful water flood project depends to no small degree on the verticality of the flood front and whether the wall advances in a true radial pattern. These two factors determine how much of the recoverable oil is actually flooded. Since fluid conductivity is in ratio to permeability, the flood front will nearly parallel the permeability profile, obtained from core analyses, from input to producers if vertical values remain constant. The highly permeable sections are flooded out first since they accept water more readily than the tighter or lower permeability sections. These loose sections,

Full experimental backing of industry is necessary to solve complex problems surrounding water-flooding producing method

which may compose only a very small percentage of the floodable sand, then have most of their floodable oil produced but continue to have water pass through them from input to producer, while the tighter sections have produced very little if any oil since the flood is advancing through them at such a comparatively slow rate due to their tightness and friction to flow. From this point on, large quantities of water may be handled daily at considerable expense. A certain percentage of the plant's capacity, producing equipment capacity, supervision and operation are henceforth dedicated to cycling water through these thief zones which are barren of oil from a water-flooding viewpoint. In some cases the handling of this water becomes so costly that projects must be abandoned before oil from the tighter sections is produced. If these tight sections compose a high percentage of the total sand body the results are easily evident.

Selective Shooting

Although a large percentage of the oil obtained by flooding may be in the high permeability sections it is useless to continue flooding through them after the recoverable oil has been produced. Accordingly, considerable experimenting has been done by operators to reduce the fluid conductivity of the loose sections and thereby equalize the vertical characteristics prior to the start of operations, or to flood the sections thoroughly and then seal them off. Selective shooting, whereby the tight sections of the input well are shot heavier than the loose ones, tends to permit formation of a vertical flood front for some distance from the input and is being used with acceptable success in many cases. Selective plugging, whereby some plugging material is injected into the loose sections, tends to equalize the fluid acceptance of all zones and has had a history of varied success.

These two major efforts at controlling water movement have been augmented by delayed drilling practice of development, whereby the sand is flooded before producing wells are drilled; by multi-packer completion whereby the sand is zoned according to permeabilities and input rates and pressures regulated accordingly; and by zone flooding. In the latter practice only a portion of the sand is flooded at a time. This is not a common practice at present but seems to offer a possibility for development.

In selective plugging the following materials have been used generally in experiments:

1. Chemicals
2. Colloidal clays
3. Wax distillates
4. Shredded material
5. Miscellaneous mixtures

In chemical plugging almost any two chemicals that form a precipitate when placed together may be used. They are injected separately, or together, into the well, with the desire being that they enter the high permeability sections and form a precipitate, such a precipitate decreasing the fluid conductivity of the loose sections and thereby making the tight sections as acceptable to water as the treated thief zones.

Colloidal Clays

Colloidal, or bentonitic clays, have been tried in many cases to seal off channeled sections or decrease acceptance of the loose sections, with qualified success. In high permeability sections it will pass on through and not give measurable assistance.

Cement in the remainder of the agents named are injected in the same manner and for the same purpose. They are thoroughly mixed and injected into the well under pressure, the idea being that they will enter the highly permeable sections and decrease its conductivity. Success from any one of these methods has been varied, but they certainly justify experimentation when an investment is at stake.

Other methods of selective plugging have been more or less extensively tried, with varied success. Success attained, however large or small, has definitely illustrated the important fact that selective shooting and plugging offer definite assistance, and in the case of the latter it appears that discovery of the proper compound to be used for differently constructed sands is the present goal of technicians rather than experiments with previously used compounds. Development will be slow until more of the industry is faced with this problem.

The use of delayed drilling whereby the sand is flooded before input wells are drilled is one which offers certain advantages to the operator flooding a sand with a heterogeneous permeability profile. This procedure involves drilling injection wells first and injecting water through them for a satisfactory length of time. The flood water drives oil towards the center of the pattern where the producing well will later be located. Oil in the loose sand sections will naturally be flooded first, since they will accept flood water more readily. However, when it reaches the theoretical center of the pattern it will be met by advancing flood fronts from other input wells surrounding the area and be trapped. Theoretically then, this loose section presents an accumulation of oil in the center of the pattern with flood water in back of it under pressure.

Tight to Loose

It is at this point that normal flooding operations would start handling excess

■ CONTINUED ON PAGE 52

Superheated steam, poison gases, corrosive fluids, acids, and other hazardous fluids hold no terrors for R/M packings.

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INDUSTRIAL SALES DIVISION

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Great Britain Builds Its Own Big Inch

Details of 1000-mile span which includes scores of underground storage tanks show how allied invasion problem was relieved by this oil transport setup

THE enormous task of fueling the Allies' mighty air armadas and invasion armies might not have been possible without a 1000-mile pipe line in England, details of which have been released for the first time by British Information Services, an agency of the British government.

The role the line has played in turning the tide against Germany was described by Geoffrey Lloyd, parliamentary secretary of Britain's Ministry of Fuel and Power, who said:

"To meet the needs of the Allied forces, Britain has had to be made into a great military oil dump. It has not only been a question of importing petroleum in quantities never previously approached or imagined. Once here, oil must be rapidly discharged, distributed and stored.

"Since 1941, we have constructed in Britain an elaborate, inter-connecting pipe line system 1000 miles long, and studded with scores of secret underground storage tanks, capable of holding large reserve stocks. It is a wholly British achievement — British in conception, planning and execution; the work of British engineers, employing British-made material and British labor throughout.

"Already, 2,400,000,000 gallons of oil, including hundreds of millions of gallons of aviation spirit, have been carried to the principal centers of consumption, especially airfields. Without pipe lines, the build-up of the Allied air offensive to anything like the desired scales would have been impracticable, and the problem of providing the huge petrol needs of the Allied invasion armies would have been greatly complicated.

Year-Round Job

"The work on the pipe lines has gone on day and night all the year round, often in bitter weather and in waterlogged ground. Every difficulty was overcome because of the pressing military need, and every branch of the line has been completed on time and in many instances before schedule."

During recent months 5 million gallons of petroleum were carried daily. The pipe line cost about £7,000,000 ($28,000,000) and 80,000 tons of steel were used in the construction.

One reason for its construction was the great increase in the quantity of oil that had to be transported due to the presence in Great Britain of the United States Eighth and Ninth Air Forces. It has also facilitated the delivery of the over 383,050 liquid tons of petroleum products which the British War Office handed over to the United States ground forces, under reverse lend-lease, between January 1 and June 30, 1944. It is reasonable to suppose that 50 percent of these quantities went toward the operational stock pile for the invasion of France.

Although the ever-growing needs of the RAF were in mind, the first part of the network to be laid down was a line to link the southwest oil ports with the London area. This pipe line was not intended for aviation spirit, but it would furnish help by leaving the British railways free to carry the increasing quantities of aviation spirit needed by RAF bomber, fighter and coastal commands. The terminal depot opened on December 5, 1941, six months after the preliminary work on the line had been begun.

The next section of the plan was the linking in of the oil ports of the northwest coast, and this was achieved by a pipe line from this area running southwards to join the first line.

Facilities for pumping in either direction were provided and storage depots were linked into the pipe line. In the event of damage to either west coast oil terminals, supplies, with an additional line, were available and could be pumped from the north or south, and the eastern area was thus provided with two sources of supply. This second line was operational on May 30, 1942.

Invasion Link

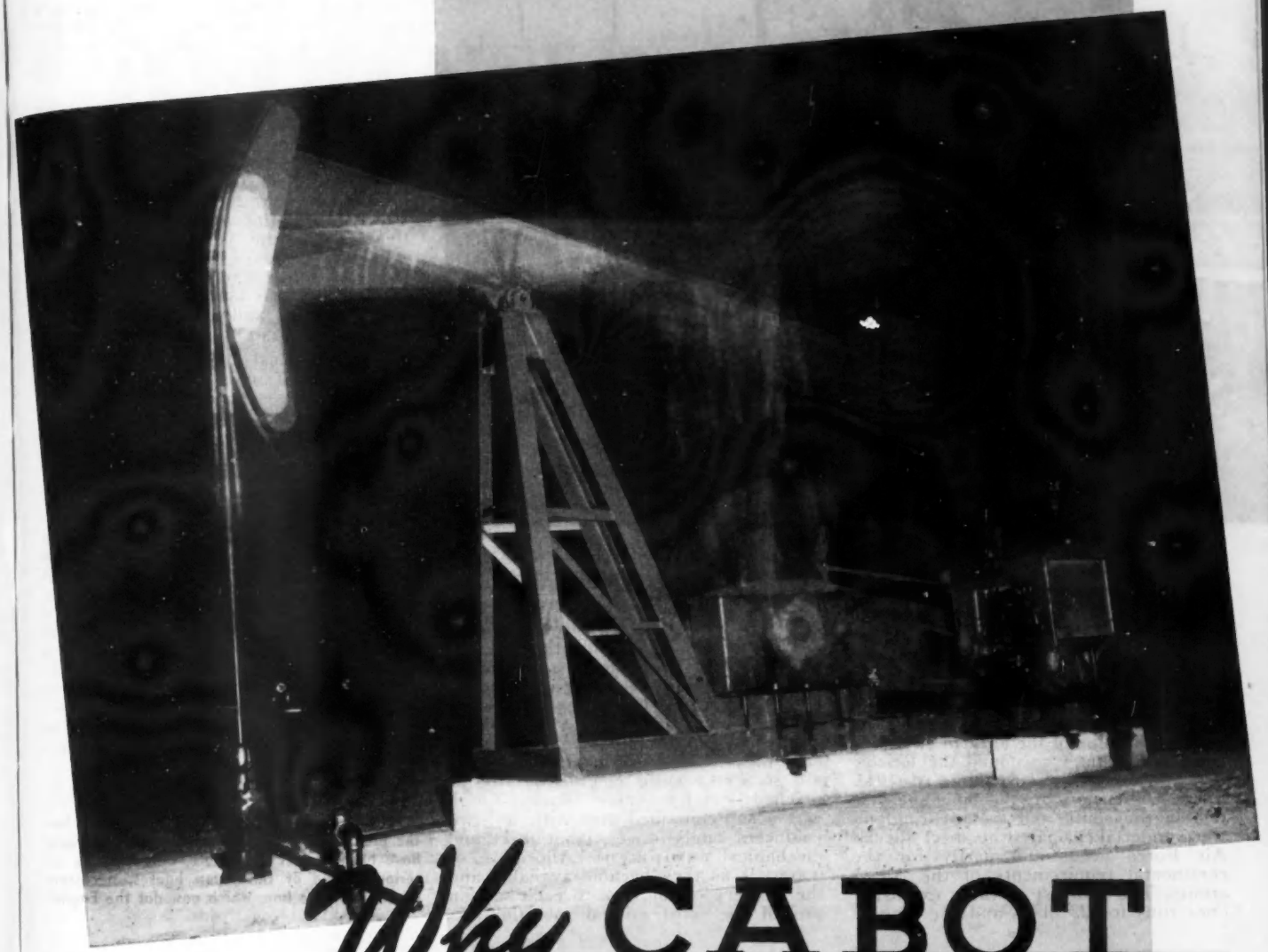
For the needs of D-Day, the next move was to make these new facilities available by linking in what were to become invasion bases. In the early summer of 1942, a spur from the original line was run to the south coast. Forty miles of the line, started May first, began operating June 30.

Up to this point, the system had enabled the British railways to deal with the rapidly growing demand by the RAF for aviation spirit, by relieving them of carriage from west to east of tens of millions of gallons of gasoline and paraffin. But further pipe lines were needed to handle the enormous increases in aviation spirit requirements of the RAF and United States Air Force based in Great Britain.

A big bomber offensive was beginning, and to prevent a lack of the octane needed to sustain this offensive, the British oil control board decided upon a new series of pipe lines to carry the aviation spirit from west coast ports to depots within easy reach of the great new airfields, already built or then building in large numbers.

The plan provided for lines running from the west coast ports handling incoming tankers. These lines linked up to form an aviation spirit circuit over 350 miles in length. In building this circuit, all types of country were encountered, and one stage of the line crosses terrain well over 1000 feet above sea level. Work on the circuit started on October 1, 1942, both lines from the western ports began operating in March and the circuit was completed by the

Since 1941 there has been constructed in Great Britain a 1000-mile pipe line studded with scores of secret underground storage tanks. Below, pipe line being laid through English countryside. (All photos from British Information Service.)



Why CABOT does a better job

Note the busy walking beam and the circles described by the counterbalances. Then . . . note the sharp lines of the sampson post and braces, indicating absence of vibration more clearly than the human eye could detect.

And there you have a portrait of quality in a pumping unit—a picture of the smooth efficiency that makes production with a Cabot so much more pleasant and profitable.

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"...here's MY warehouse!"

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Already 2400 million gallons of petroleum products including huge quantities of aviation gasoline have been carried by Great Britain's "Big Inch." Above, pipe line being laid across main road.

end of August, 1943. A considerable number of important storage depots were linked into the circuit and it is now the life line of the air arm stretched from this country to pound the Reich.

In the autumn and winter of 1943, further extensions to the pipe line system in the south and east of England were undertaken, partly to meet special Air Force needs and partly for the continental requirements of the Allied armies. The shortest of these extension lines runs for 22 miles and the longest for about 120. Another is nearly 100 miles in length, and all were in operation by the middle of March, 1944.

Speed the Keynote

The method of organization worked out for the original line was so successful, that it was used in the construction of all succeeding pipe lines. The prospective route was broken up into a number of equal sections with a view to carrying on the work at equal speed in all sections, with completion to be reached simultaneously. Each section was a self-contained unit with its own engineers, lands officer, labor force and mechanical equipment. Allocation of materials as they became available and the delivery of the pipe to each section proved the most critical job. On this depended the equal progress of every part of the line throughout. Speed was the keynote, but quality of materials and workmanship were of paramount importance.

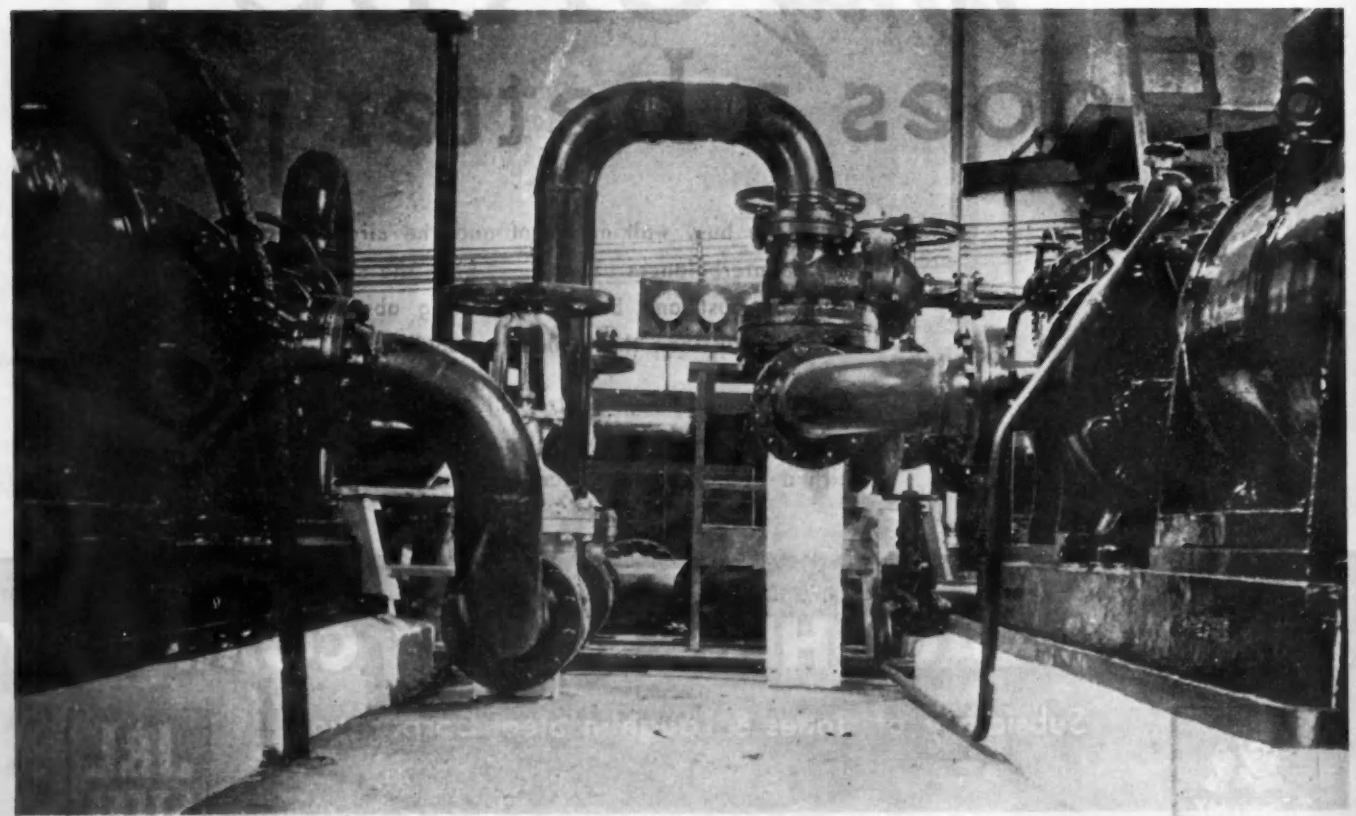
Routes were chosen across the open country wherever possible so that the fullest use might be made of mechanical excavators. Agricultural interests were closely watched. On an average, a strip of ground 15 to 20 feet wide only was affected, and this only for a comparatively short time. In trenching, the top soil was removed and kept separate from the sub-soil so that on completion the top soil was again replaced on top of the trench, and farming could continue as soon as the line was completed.

Many physical difficulties . . . water obstacles and rivers by the score . . . have been crossed, ranging from large tidal estuaries, middle reaches of substantial rivers, to upper reaches of those rivers into small brooks and drainage ditches.

The maximum laid in one week was 18 miles of 10-inch line. The best sustained effort was 125 miles of both the 10-inch and 8-inch, in 84 days. More than half the system consists of 8-inch pipe and more than a quarter of 10-inch. The short stretches of spurs consist of 12, 8 or 4-inch pipe. Practically all the pipe lines are designed to work at a pressure of 600 pounds per square inch. This pressure enabled comparatively light steel pipe to be used.

In normal construction, every joint in the pipe line is "butt welded." Britain's

Without Great Britain's 1000-mile pipe line the problem of providing invasion armies would have been almost impossible. Below, shows interior of one of the pump houses, necessary adjuncts of the line, which now dot the English countryside.



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IN your wholehearted support of the Payroll Savings Plan, you are doing far more than backing the most valid system of war financing—and building a powerful dam against the onrush of dangerous inflationary dollars.

By encouraging the all-out participation of your employees in this greatest of all savings plans, you are helping to create a sound economy for post war days.

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You and your employees, through *mutual* cooperation in this forward-looking plan, are gaining a new and closer understanding—the cornerstone of a firmer, *mutually* profitable relationship!

National benefits, too, follow the "All Out" effort you are making! The prosperity of our United States rests on the economic stability of both management and labor. Your Payroll Savings Plan is working constructively toward the assurance of both!

The Treasury Department acknowledges with appreciation the publication of this message by

THE OIL WEEKLY

★ *This is an official U. S. Treasury advertisement prepared under the auspices of Treasury Department and War Advertising Council* ★

Above is shown how Great Britain's "Big Inch" crosses English streams in its 1000-mile path.

pipe line system had to be built without welders, as none could be spared from the shipyards. In place of welded joints, special couplings are used. These allow a certain amount of expansion in length in the line. Where only welded joints could stand the strain of pressure, anchors are used. These anchors are small concrete piers through which the lines run at points where it bends, and relieves the joints of all abnormal strain. The pumps used are nearly all of the centrifugal type driven by electric motors. To maintain efficiency and prevent the formation of rust, scrapers and brushes run through the lines at regular intervals. In the initial construction, arrangements were made whereby these "go-devils" can be introduced and removed from the lines where oil and scale and rust has collected, and which are separated out in large filters which are installed at intervals along the whole system.

Before it was used by oil, the pipe line was tested with water at considerably over working pressure, and "go-devils" were sent along the entire length. The whole length of the system is under a continuous patrol.

Competing with Co-ops

■ CONTINUED FROM PAGE 40

other sinister aspects that business must examine—and act upon.

Gobbling-up Prospect

In this country, the co-operative movement has been largely a producers' movement. From here out, the great effort will be to organize the consumers' co-operative movement as well—to enlist labor, to build more factories and refineries, to open stores of all kinds in the cities. When that day comes—if you permit it to come with the same enormous advantages that the producer co-operatives now enjoy—even the farmers will be gobbled up by the business system that they have thought of as their own.

It is written in the books of co-operative leaders that there are four steps in the system of co-operation—that they will take over first, marketing; second, manufacturing; third, banking; and fourth, agriculture itself. In America, the co-operatives have taken the first three steps. They are in marketing. They are in manufacturing to a degree far greater than most business men have thought. They are in banking in a way that is seriously threatening the country banks of the nation.

In England the consumer co-operatives have taken all four steps. They are definitely in agriculture—owning livestock and dairy farms, fruit and vegetable farms, tea plantation, even grain land, where they raise the foodstuffs that are sold in city consumer co-operative stores at the low prices that labor demands. It is useless to say that that cannot happen here. It can. It is the plan of the leaders of co-operation that it shall happen.

The co-operative commonwealth will eliminate the party system of government, all business for profit, all salesmen, all advertising, all of the American system of free enterprise and free markets under which our nation has grown great.

Water-flooding Control

■ CONTINUED FROM PAGE 46

volumes of water. However, with the loose sand sections filled with fluid under pressure, there is no fluid movement within it. This fact makes the sections which were formerly the tight sections due to low permeability now the "loose" sections due to their relatively low fluid saturations, as they have not as yet been invaded by flood water. Thereafter flood water introduced into input wells enters these low permeability sections until it drives the oil contained in them to the center of the pattern and is met by advancing flood fronts from opposing inputs. Thereotically, all of the floodable oil in the pattern, from both tight and loose zones, is now concentrated in the center of the pattern under pressure.

The producing well is then drilled, preferably into the tighter sand only. The producing well will start making oil at the peak rate.

It is not intended to infer that this practice is a cure-all for water channeling and variable permeability sections in all cases. It appears to be more of a method that should be highly effective if physical sand characteristics are favorable.

For example it seems evident, though not definitely known, that effectiveness of this method would strongly depend on the ratio of horizontal and vertical permeabilities. Presence of shale breaks, very tight sections and low vertical permeabilities will permit lateral movement only through the sand, which is essential to success of the project. However, a comparatively regular permeability section coupled with high vertical permeability invites vertical movement of water and low oil recovery. The consensus of flooding engineer's opinions is to be assured of no vertical water movement in the sand before using this method.

Zone flooding accomplishes the same results as delayed drilling if there is no vertical permeability and the tight and loose zones are segregated so that one zone may be handled at a time.

Flow or Pump

In conjunction with these development practices the question of whether to flow or pump production and use of high versus controlled flooding pressures and volumes enter the picture. There is no unity of agreement on any of these subjects in the industry as yet due to the small amount of data available and particularly since insufficient facts are known under like sand conditions. These problems must be solved in the near future if large-scale flooding is to become popular with all operators.

The use of different patterns than those now beinig used may inicrease flood efficiency considerably. Electrolytic model studies indicate a staggered line flood to be the most efficient on an area flooded basis with the 7-spot, 5-spot and regular line following in that order. It is thought by many that the use of either the 7-spot or 4-spot decrease materially the danger of bypassing compared to the 5-spot because flood fronts advancing from input wells come together at approximately twice the distance from the producer than in the 5-spot. This, of course, creates a complete encirclement of the producing well by an advancing flood front with a smaller chance of any of the sand being bypassed.

It is known beyond all question that water flooding is the most efficient producing method of recovering oil known to date. However, the relatively few engaged in this method of production have as yet not solved the major problems, one of the most important of which is controlling water movement. This and other problems can and must be solved but need the full inventive and experimental weight of the industry applied to them first.

The Deeper You Go the More You Need

UNIFORM STRENGTH

• The greater setting depths of the future, the longer casing strings required, and the higher pressures you'll encounter demand a casing with high strength. That's why we stress the fact that *every square inch* of *every length* and *every joint* of Republic Electric Weld Casing and Tubing is Uniformly Strong.

You can be sure of that quality from the way Republic Casing is made—formed from flat-rolled steel of uniform strength—welded by an improved electric weld process that assures a weld as strong as the wall—and every foot fully normalized.

This is another reason why more than 100,000,000 feet of Republic Electric Weld Casing and Tubing have given such dependable service.

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Self-Lifting Spool Rack

Shop-made, truck-powered sprocket drive solves problem of stringing up lines

STRINGING up lines is one of the immediate problems that usually confronts the well service contractor who services or redrills a well, particularly one of the typical completions where practically no equipment such as drawworks, bull- or calf-wheel, blocks or lines are left at the well.

In the matter of lines alone, it is no small problem to bring up spools of line, rig them for unreeling, and also have provided a means for their being respooled upon completion of the job; and with present wage scales and labor shortages, it behooves the contractor to do all this in the shortest possible time.

Labor-Saver

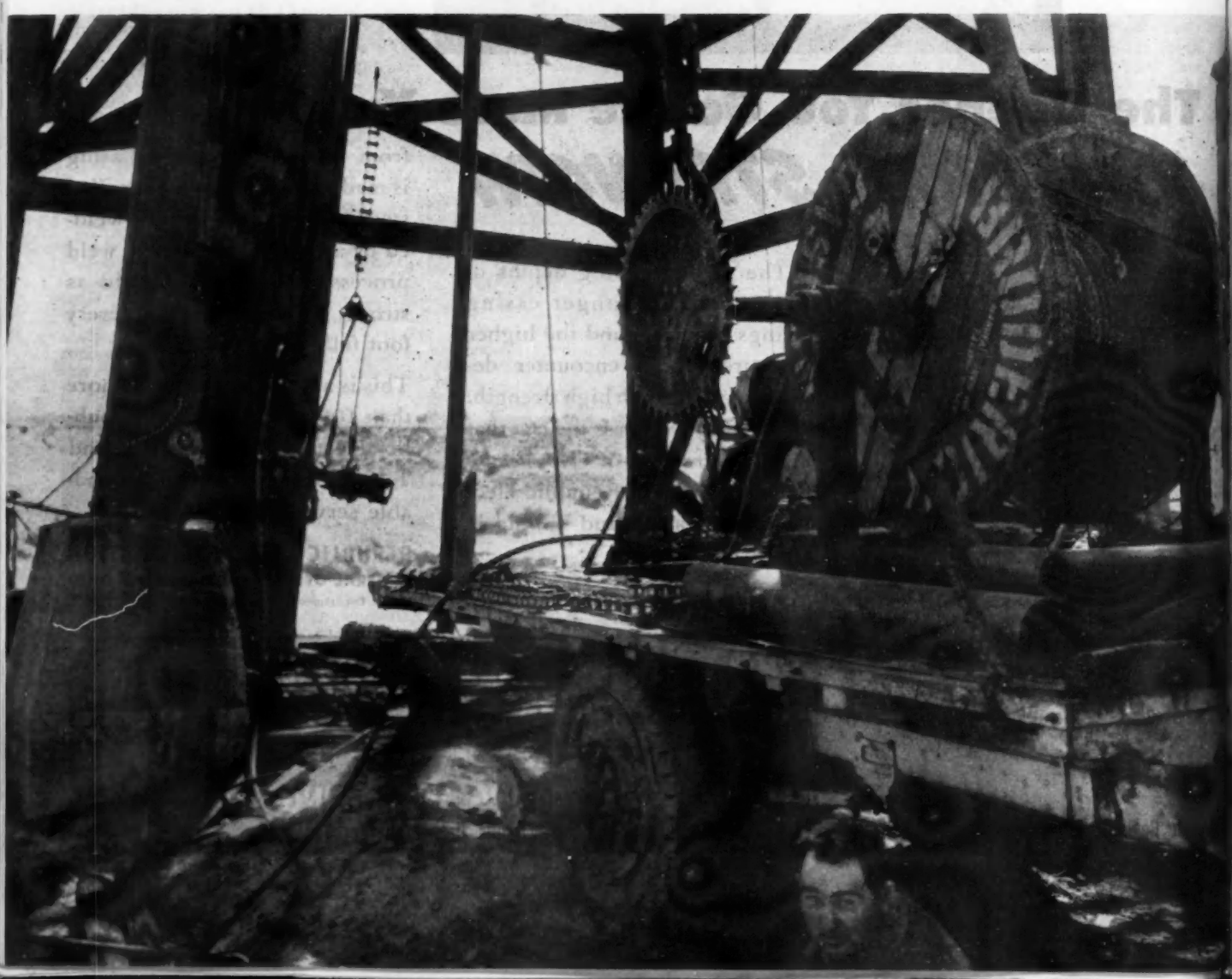
An ingenious labor-saving device employed by one contractor consists of a shop-made folding rack that can be mounted on any truck bed. It is so constructed that one section of it can fold outward, latch on to the spool, fold back and in the latter position hold the spool so it can be turned freely, driven by a specially-constructed sprocket attached to a shaft that is driven from a smaller sprocket on one of the rear wheels of the truck. The base members of the rack consist of two longitudinal 4-foot lengths of 7-inch pipe spaced at either end by shorter transverse lengths of 4-inch pipe, the latter dimension being one that can be varied according to the width of the truck bed on which the unit will be carried.

Set atop this base is the other framework which supports the spool. This unit, built of 4-inch pipe with 2-inch pipe angle bracing, is pivoted to the inner side of each of the 7-inch members at a point approximately three-quarters of the way from the front or truck-cab end of the base. As shown in the photographs, the vertical members of the spool support are just high enough to swing a spool without the latter touching any part of the truck bed or supporting framework, while the two 4-inch longitudinal pieces extend back far enough to provide ample leverage and a secure base when the spool is mounted.

Split Bearing

Welded to the upper end of each of the two upright supporting members is a split bearing designed to take the 2-inch horizontal pipe which serves as an axle running through the spool. This split bearing, likewise shopmade, swings at its back side on a heavy hinge modified from a two-link section of rotary chain. Trimmed and welded to the two-bearing halves, the links make extremely strong and tightly-operating hinges.

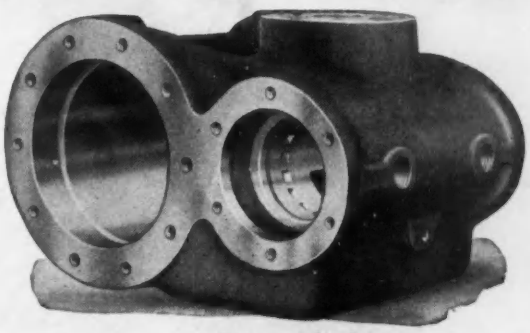
These bearings open toward the rear of the truck so that when the upper section of the rack is tipped back the open bearing can be latched over the axle of the spool that has been previously spotted on the rear of the truck bed. Following this the rack may be pulled



Sprocket on end of dual wheel hub carries chain which drives larger unit on reel shaft extension, permitting power reeling of cable or brake-controlled feed-off simply by jacking up right rear wheel and manipulating truck controls. Reel is dogged to shaft to provide direct drive.

BALANCED

FOR A QUICK *Start*
AND A QUICK *Reverse*



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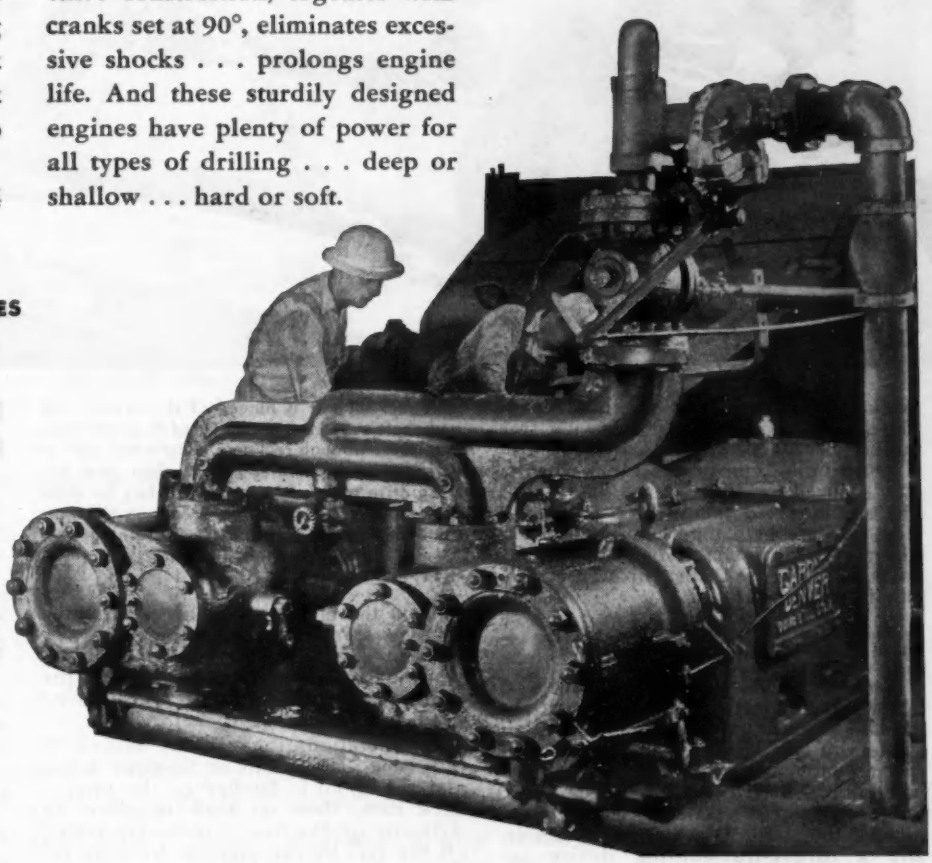
Driving a whirling drill stem deep into the earth . . . hoisting thousands of feet of pipe out of the hole . . . call for a drilling engine with easy starting, quick acceleration from rest, or a quick reversal without excessive shock to the engine.

Gardner-Denver DEL 14 x 14 Drilling Engines answer all these requirements. Their balanced steam valve construction, together with cranks set at 90°, eliminates excessive shocks . . . prolongs engine life. And these sturdily designed engines have plenty of power for all types of drilling . . . deep or shallow . . . hard or soft.



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2. Cylinders built for 400 pounds pressure.

3. Rugged one-piece main frame and roller-bearing crankshaft assure built-in toughness.

4. Simple, hand-operated valve gear is easily adjustable to suit power requirements—permits maximum economy.

5. Single eccentric valve gear gives a quick-opening valve.

6. Engine is totally enclosed for protection against dirt, water and grit.

For complete information on Gardner-Denver Drilling Engines, write for descriptive bulletin

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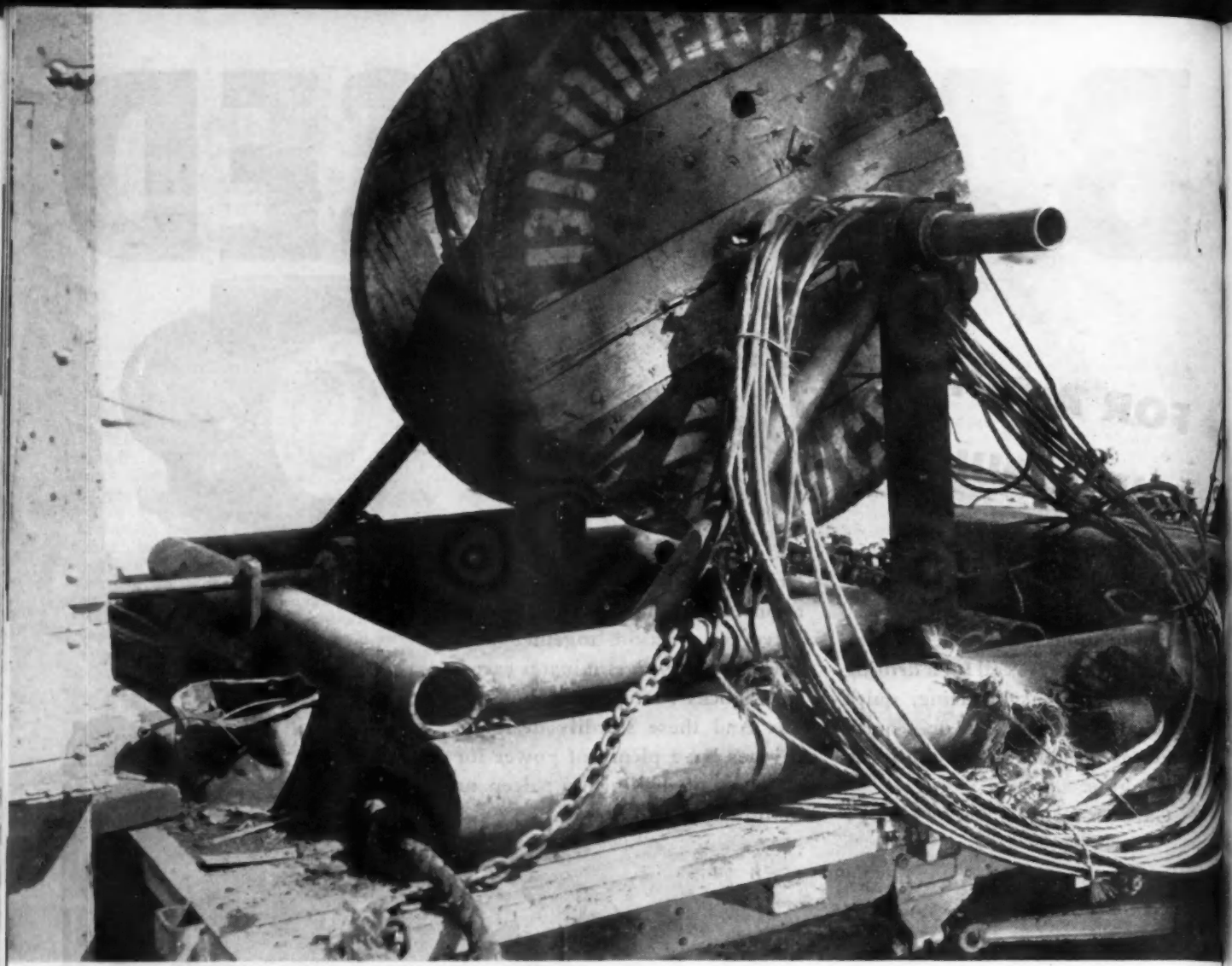
GARDNER-DENVER *Since 1859*



This reel support is hinged at its forward end, and shaft supports may be tilted to permit slipping shaft through reel core, after which pull on extended arms elevates reel to clear floor and bring drive sprockets to proper centers for chain engagement. A latch through ears on the main frame insures the unit against overturning when pull is applied to line.

back into normal position, thus raising the spool and allowing it to swing free, in the position shown in the photograph. The swinging end of the rack, when in the secured position, rests back upon the similar-sized members of the base. The two are held together by a pair of short vertical flat steel bars, a horizontal steel pin being thrust through matching holes in the tops.

Torque-Transmitting Device

Retainer collars secured with set screws are slipped over the ends of the axle to prevent end play of that shaft while the spool is turning. To prevent lateral movement of the spool itself after it has been centered on the shaft, another collar is set-screwed in place against the spool flange on the one side, and a torque-transmitting device secured against the other side. The latter is a sleeve slipped over and locked to the shaft on one side of the spool and to which is welded a piece of flat iron extending off at a 90-degree angle from the shaft axis. This flat piece of steel has a long slot cut in its outer end into which is slipped one of the stay bolts which extend through the spool from side to side. With this fitting bolted in place to the side of the spool the latter becomes an integral part of the shaft. The long slot in the flat steel band permits adapting the device to practically any spool wherein the position of staybolts differ by several inches.

Out on the end of the shaft is mounted a large sprocket wheel which may be connected with a length of used drawworks chain to an extended hub on the truck rear wheel, the latter also being fitted with a small sprocket.

In operation, the rack is lashed to the truck with chains or tie-down bolts, and the spool is latched to the tipped-back rack, then set back in place. In stringing up the line, it is merely pulled off the reel by the highline working off the cathead, following which it is spooled on to the drawworks drum. For respooling, an operation that frequently consumes considerable time, the rear wheel of the truck is jacked up and the chain thrown over the sprockets, after which the spool is wound up by the power drive in a matter of only a few minutes.

This device is saving considerable on labor costs, and in the cases where jobs are done on a contract or footage basis, the saving in time on non-productive phases of the work is many times over saving its original small cost of construction.

Natural Gasoline Output In December Sets Record

With a new record production reached in December at 12,990,000 gallons daily, output of natural gasoline and allied products in 1944 totaled 4,226,754,000 gallons, an average of 11,549,000 gallons daily, against 3,684,072,000 gallons, or 10,093,000 gallons daily, for 1943, it was announced by the Bureau of Mines February 22.

The states making the greatest contribution to the increased production were Texas, Louisiana, California, and Arkansas, in the order named.

The bureau reported that production during the year included 2,188,284,000 gallons of natural gasoline, against 2,115,372,000 gallons in 1943; 843,024,000 gallons of cycle products, against 657,846,000 gallons; 209,034,000 gallons of isobutane at natural gasoline and cycle plants, against 150,738,000 gallons; 986,412,000 gallons of other liquefied petroleum gases at plants, against 760,116,000 gallons; 183,834,000 gallons of liquefied refinery gas at refineries, against 170,898,000 gallons, and 100,800,000 gallons of benzol, the same as for 1943.

Stocks of natural gasoline and allied products at the close of the year were 178,584,000 gallons, a decrease of 12,138,000 gallons below December 31, 1943, stocks, all of the decline being in refinery stocks, the bureau reported.

The Fairbanks-Morse ZC Engine shown here is fitted with carburetor for gas and gasoline operation. It has vapor cooling, cast-iron sub-base, easily adjusted variable speed governor, metered splash lubrication, two extra-heavy flywheels, roller main bearings, Fairbanks-Morse Super-Spark High Tension Magneto, and exhaust muffler.

Crankcase cover is easily removed for accessibility to all working parts.

You Can Love 'Em and Leave 'Em

YOU'LL "love" the low oil and fuel consumption of Fairbanks-Morse ZC Engines. But best of all you'll like the way you can leave these engines for hours without attention.

They need little attention because they're designed specifically for oil field service. Their simple, single-cylinder construction and slow speed operation assure a minimum of wear. And almost any fieldman can service them right on the spot.

Fairbanks-Morse ZC Engines are dependable, tough, easy-starting . . . have been for years. Experience proves that they do a better job at less cost than many higher priced pumping engines.

For more information write or contact Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

Buy and Hold MORE War Bonds

FAIRBANKS-MORSE

POWER, PUMPING, AND WEIGHING EQUIPMENT

Draft Deferment

CONTINUED FROM PAGE 32

3. Location of refinery or plant.
4. Scheduled hours worked per week.
5. Industry branch and state covered by the list.
6. Total employment, all ages and occupations.
7. Name of registrant.
8. Date of birth.
9. Occupational title.

Each company or operator shall furnish the "personnel list" separately by state where employes are located for each industry branch (see Exhibit 1) as follows: Production (oil and gas); refining; natural gasoline and related plants; transportation; etc., (see Exhibit 1); *except that* refineries, natural gasoline plants, and other industrial establishments should prepare a separate list for each such establishment or plant rather than by state; *and* drilling contractors, geophysical companies, and similar operations for whose employes the immediate place of employment is not permanently fixed should submit separate lists for each state in which the employer maintains payroll records, including in such lists employes working in other states. It is important that the "personnel list" be furnished separately for each state or for each plant, as instructed above, as PAW is required to submit such lists to each state Selective Service director to be used in cases of appeal for deferments.

b. An "occupational list," in quadruplicate, (PAW Form 55) which will show only those occupations in each establishment within which men 18 through 29 years of age are now employed who were on January 1, 1945, classified II-A or II-B. This list *will not be filed*, however, by employers with a total employment of 10 persons or less. The information contained is *necessary* so that PAW may *evaluate* the needs for deferment within any occupational group in the 18 through 29 age bracket. This list will show the following information:

1. Name of company (or employer, if individual).
2. Address of company.
3. Location of refinery or plant.
4. Scheduled hours worked per week.
5. Industry branch and state covered by the list.
6. Total employment, all ages and occupations.
7. Occupational title.
8. Total number of employes, all ages within each occupational group.
9. Number of men, 18 through 29, classified II-A, II-B as of January 1, 1945.

Each company or operator shall furnish the "occupational list" separately for each industry branch (see Exhibit 1) as follows: Production (oil and gas); refining; natural gasoline and related plants; transportation; etc., (see Exhibit 1); *except that* refineries, natural gasoline plants, and other industrial establishments should prepare a separate list for each such establishment or plant.

c. It must be clearly understood that PAW will consider deferments for registrants in this age group *ONLY* if the company or operator has submitted "personnel lists" and "occupational lists"[1] previous to or accompanying the filing of the Forms 42-A Special (revised).

d. In addition to the lists an employer must submit two sets (composed of three copies each) of DSS Forms 42-A Special (revised) for each employe meeting the criteria in Paragraph 1(b), (c), and (d) for whom the employer feels that he must obtain

Sample of PAW Form No. 54

PAW Form 54 (February 1945) — Budget Bureau No. 42-R 739 — Approval Expires_____

PETROLEUM ADMINISTRATION FOR WAR
Washington 25, D. C.

PERSONNEL LIST
for
Certification Plan for Employes
In the 18 through 29 Age Group

Name of company:_____ Address:_____

Location of plant or refinery:_____ Scheduled hours worked per week:_____

Industry branch and state covered by this list[1]:_____
(Industry branch) (State)

Total employment—(all ages and occupations) for industry branch covered by this list:_____

Order of Importance	Name of Registrant[2]	Date of birth	Occupational title
1			
2			
3			
4			
5			
etc.	(Extend form to provide sufficient room for individual listing of each employe in age group)		

It is certified that all men listed above—

a. Were classified II-A or II-B on Jan. 1, 1945 and on that date were in the age group 18 through 29.
b. Are now in my employ.
c. That such list has been submitted to no other Certifying Agency.

(Signature of Company Official)_____

Date:_____ (Title)_____

Certifying Agency Code No. 6

IMPORTANT NOTES

Employers may duplicate the above form or obtain additional copies from any PAW District Office. In making duplicate copies, a typewriter or other means may be used. Copies of form should be made on standard 8 x 11 inch letter head size paper.

[1] Insert the name of the appropriate industry branch found in the main captions in Exhibit 1.

[2] Every employe 18 through 29 years of age, inclusive, who was on January 1, 1945, classified II-A or II-B **must** be shown on the list since the number of men PAW will be able to certify for deferment will be directly related to the total number of names contained in such lists. Employes most important to continued operation should be placed first on list and remainder to follow in order of essentiality.

Sample of PAW Form No. 55

PAW Form 55 (February 1945) — Budget Bureau No. 42-R 740 — Approval Expires_____

PETROLEUM ADMINISTRATION FOR WAR
Washington 25, D. C.

OCCUPATIONAL LIST[1]
for
Certification Plan for Employes
In the 18 through 29 Age Group

(This list will not be filed by employers with a total employment of 10 persons or less.)

Name of company:_____ Address:_____

Location of refinery or plant:_____ Scheduled hours worked per week:_____

Industry branch covered by this list[2]:_____

Total employment—(all ages and occupations) for industry branch covered in this list:_____

Occupational title	Total Number Employes (all ages)	Number of men 18 through 29 now classified II-A, II-B as of 1/1/45

(Extend form to provide sufficient room for listing all occupations covered)

Certifying Agency Code No. 6

IMPORTANT NOTES

Employers may duplicate the above form or obtain additional copies from any PAW District Office. In making duplicate copies, a typewriter or other means may be used. Copies of form should be made on standard 8 x 11 inch letter head size paper.

[1] This list should contain only those occupations in which men within the 18 through 29 age group are employed.

[2] Insert the name of the appropriate industry branch found in the main caption in Exhibit 1.

Rocky Mountain Oil Men Now Organized

The newly organized Rocky Mountain Oil and Gas Association, with permanent offices in Casper, Wyoming, and H. O. English as executive secretary, was established for the purpose of coordinating activites, studying administrative proceedings and making a general survey of operations. Officers include Paul Stock, operator of Cody, Wyoming, president; James Donoghue, Mackinnie Oil and Drilling Company, first vice president; A. B. Cobb, Home Oil and Refining Company, second vice president; H. O. English, executive secretary.

Starting on left, up the table, across the back and down the right side (directors designated by asterisk): *Jim Maroney, Sinclair Wyoming Oil Company; *J. F. Cullen, Stanolind Oil and Gas Company; *George Jarvis, Wyalta Oil Company; *H. Leslie Parker, independent; Charley Warren, Shell Oil Company; *D. T. Hoenshell, General Petroleum Corporation; Jack Cole, Ethyl Corporation; *G. E. Robertson, Barnsdall Oil Company; *E. G. Lemmers, Trigood Oil Company; H. O. English, executive secretary; *Paul Stock, president; Fred Goodstein, Trigood Oil Company; *Jim Donoghue, first vice president, Mackinnie Oil and Drilling Company; *Carroll Kirk, Kirk Oil Company; *Charles S. Hill, independent; *Gilbert J. Mueller, Argo Oil Corporation; *H. A. Stewart, The Texas Company; F. W. Bruner, The Carter Oil Company; *R. B. Curran, The Carter Oil Company; *Glenn Nielson, Husky Refining Company.

Center: Don Griffin, Ohio Oil Company; *Pete Gillespie, representing supply, service and specialty companies; Walter Krampert, consulting geologist; *Kenneth Davis, Cut Bank Refining Company; and *J. A. Deffeyes, Pacific Western Oil Corporation.

Other board members not shown in the picture include H. P. Macauley, Continental Oil Company; C. B. Richardson, Consolidated Royalty Company; Phil N. Fortin, Mule Creek Oil Company; M. H. Robineau, Frontier Refining Company; H. C. O. Clark, The Pure Oil Company; M. E. Tate, rotary drilling contractor; Dean Terrill, Kerlyn Oil Company; Fred M. Manning, producer; Warwick M. Downing, producer; Warren Skelton, representing independent landmen; and A. B. Cobb, Home Oil & Refining Company.

deferment. The employer need endorse only the original copy of each set.

e. An officer of the company must sign the "personnel list" and certify that all men listed:

a. Were classified II-A or II-B on January 1, 1945, and on that date were in the age group 18 through 29.

b. Are now in his employ.

c. That such list has been submitted to no other Certifying Agency.[2]

4. Where Employers Should Send Requested Information

Employers shall send all above listed material to the Manpower Counselor, PAW, Washington 25, D. C. A supply of new Forms 42-A Special (revised) will soon be available at all local boards. Employers are urged, however, to submit the personnel and occupational lists described above *IMMEDIATELY*. The Forms 42-A Special (revised) should follow as soon as possible.

The right of appeal and procedures existing in connection therewith are in no way modified by these new provisions. Pending the filing of Forms 42-A Special (revised), the employer should not fail to file an appeal in the regular manner within the 10-day period following the reclassification into I-A of any indispensable employe even though he may come within the 18 through 29 age group. This will provide some temporary protection by delaying induction until the case can receive proper consideration under the new certification procedure.

[1] This list will not be filed by employers with a total employment of 10 persons or less.

[2] The only exception to the rule is in those instances where employers have registrants who are on the reserved list of the Office of Scientific and Research Personnel or employes under the cognizance of the Office of Scientific Research and Development, or Procurement and Assignment Service. Such employes should not be listed by the employer on any general list submitted to the claimant agency representing the plant or establishment, but should be listed separately and submitted to the appropriate group above.

It should also be clear that the establishment of this procedure does not in any way deny to the local board the right to defer registrants not certified, if in their judgment such a registrant would qualify for deferment under a strict interpretation of being "necessary to and regularly engaged" in war production or a war supporting activity.

For the present time all registrants 30 years of age and over who are necessary to and regularly engaged in an activity listed on the WMC list of essential activities are eligible for occupational deferment without further certification by a claimant agency. Employers should file DSS Form 42-B in the usual manner.

For further information, it is suggested that the Office of the Manpower Counselor, PAW, Washington 25, D. C., or the District Manpower Counselor in PAW Districts II, III, and V, be consulted.

Maps of California and Four-Corners Area Ready

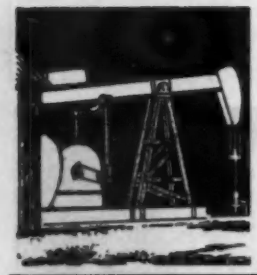
Fifty years of exploration and the drilling of at least 100 test wells have not exhausted the possibilities of finding additional supplies of oil in the Puente and San Jose Hills district in Los Angeles, San Bernardino and Riverside Counties, California, it was declared by Geological Survey Director William E. Wrather in releasing a set of charts and a map of the area.

Printed on a single large sheet, the survey consists of 16 structure sections showing the structure and lithologic character of a granitic basement complex, the overlying rocks of Cretaceous or Eocene age, and the succeeding later Tertiary rocks, explained briefly in the accompanying text; a table giving the names, locations, dates of drilling and total depth of 83 of the wells in the area and an interpretation of the oldest formation penetrated by each, and a generalized map of the area.

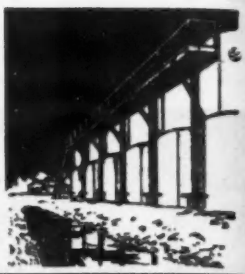
Copies of Preliminary Map 23 of the Oil and Gas Investigation series, may be had from the Geological Survey, Washington or Los Angeles, 60 cents each.

The Survey also has released a chart on the Four Corners area of Utah, Colorado, New Mexico and Arizona, summarizing the results of long-time studies and accompanied by a mimeographed text in which the thickness, character and distribution of the Paleozoic formations are described and the oil and gas possibilities reviewed, with some suggestions as to generally favorable localities in which deeper testing appears warranted. Copies of Preliminary Chart 7 of the Oil and Gas Investigations series may be secured at 40 cents each, from Washington, Tulsa or Denver.

Other maps released include a generalized geologic map of the Eastern Purisima Hills District in Santa Barbara County, California, (Preliminary Map 26, 35 cents a copy from Washington or Los Angeles) indicating possibilities that accumulations of oil may have been trapped in the Vaqueros sandstone or in fractured beds in the Rincon shale in the Santa Rosa Hills, and a similar survey of the Salinas Valley, California (Preliminary Map 24, 35 cents from Washington or Los Angeles), showing stratigraphic zones in which rapid lateral change in character or porosity may have combined with folds or faults to localize as yet undiscovered accumulations of oil.



OPERATING HINTS *For Production Men*



$5.00 is paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, P. O. Box 2608, Houston 1, Texas

Fuel Flow Relief Valve Protects Pumping Unit

STRIPPER WELL PUMPING

When only a small amount of gas is available to power the lease, the engine frequently will draw all the gas from the line and, if operated through a small volume or equalization chamber, will function satisfactorily except in case of a sudden surge of gas. This sudden change in the fuel supply so alters the mixture that the unit will choke and die, requiring the presence of the pumper before it can again be put back on the line.

One operator guards against this by installing a tee and riser in the line ahead of the volume tank, setting a discarded standing valve at the top of the riser. The weight of the ball holds the line closed against pressures sufficient to supply the engine with fuel, but in case of a sudden rise, the ball will lift from the seat, venting the surplus from the line and maintaining approximately uniform pressures on the accumulator.

A discarded valve, if carefully reseated, serves admirably for this purpose and, not being subjected to heavy duty, will stand up over a long period.

Salvaged standing valve serves as check valve to vent surge in gas volume and prevent mixture change.

Adjustable Counterweight Balances Jack Load

JACK LINE EQUALIZING

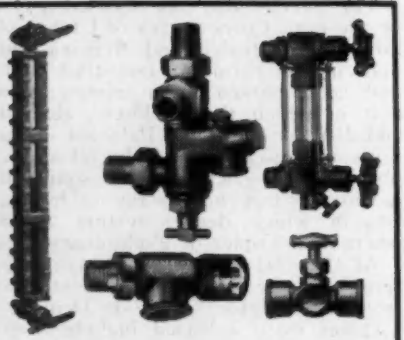
Correct balancing of weights or load on either side of the jack plant is very important if power costs and wear are to be kept at a minimum. This means that the wells on one side of the jack plant must be equal in load or pull to the wells on the other side of the jack plant. Quite often it is possible to do this merely by adding weight to one or more wells. However, it sometimes happens that the pull exerted by a well changes with the time it has been on the beam. In this case an uneven pull is put on the jack plant. The changing pull may be due to a well starting up after having been down for some time and as the oil lightens up with the making of gas the load also lightens up.

One operator solved the problem by making a highly portable weight arm that may be moved from one well to another in a matter of minutes. It consists of two 4-foot pieces of 2-inch pipe spaced about 10 inches apart by two short pieces of sucker rod. This is slipped over the horse head of the pumping jack and as much weighting material as needed is hung on to the ends of the pieces of pipe.

Since the weight arm may be taken apart piece by piece, no one part is very heavy and one man can easily add weight to the well.

Weight units, each of a size to be lifted by one man, enable this jack to be given proper balancing to equalize rod-line pull and eliminate irregular impulse to the well pump.

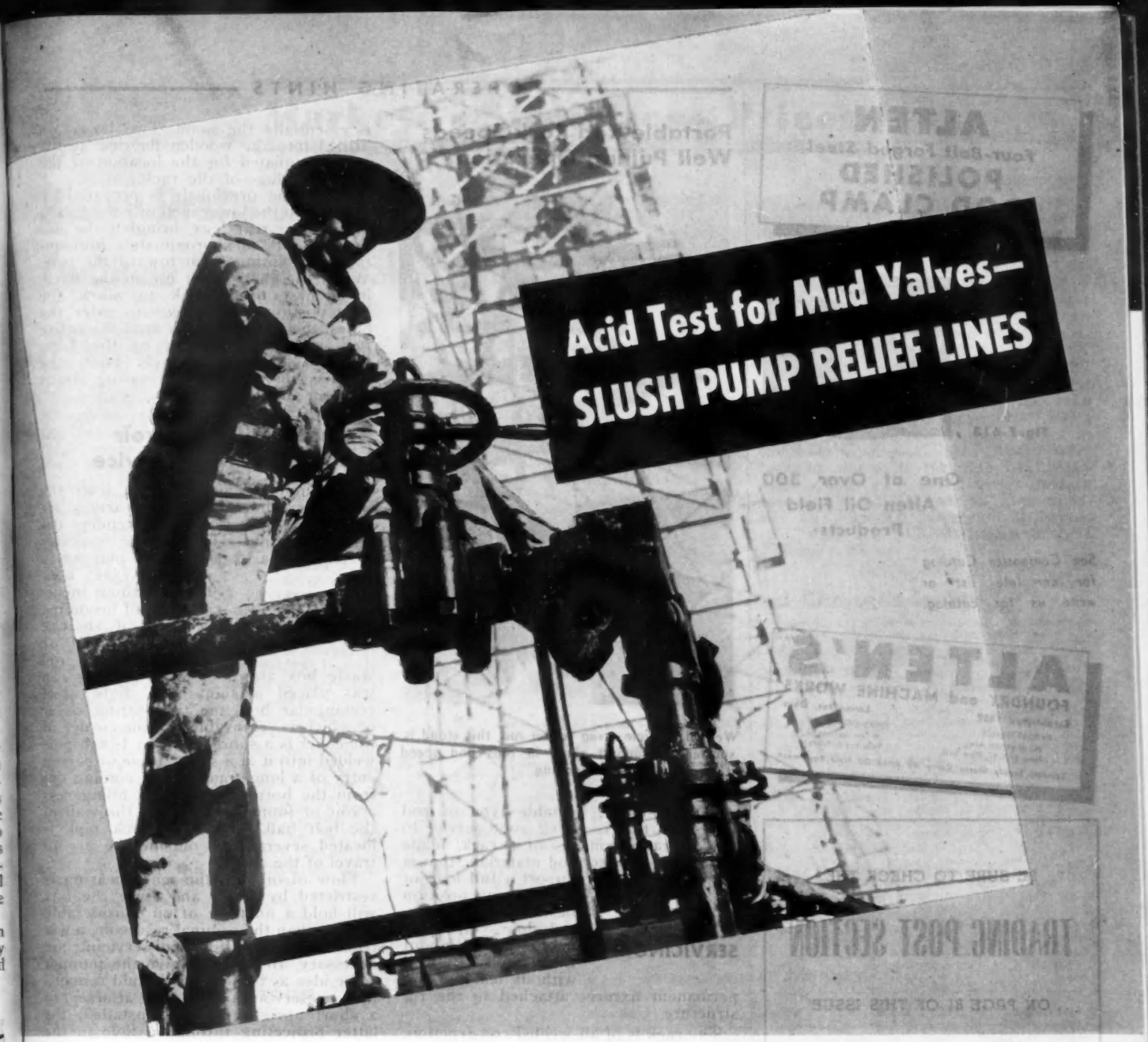
PENBERTHY
QUALITY PRODUCTS



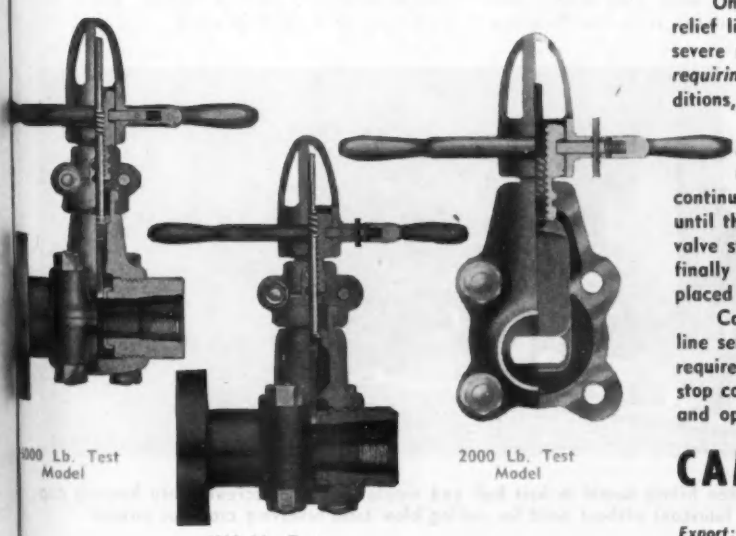
Penberthy liquid level gages of various types—injectors—ejectors—all so widely used throughout the oil industry because they have always been dependable under the most severe service conditions.

All are of rugged construction and made by an organization with 57 years experience in the manufacture of quality products.

PENBERTHY INJECTOR CO.
DETROIT, MICH. Canadian Plant WINDSOR, ONTARIO



CAMERON "FLEX-SEALS" LAST 5 TIMES LONGER!



000 Lb. Test Model

2000 Lb. Test Model

4000 Lb. Test Model

One of the toughest valve jobs on a drilling rig is the slush pump relief line, yet a Cameron "Flex-Seal" Mud Line Valve remained in this severe service during the drilling of 5 ten thousand foot wells *without requiring repairs of any kind.* Conventional valves, under identical conditions, were able to drill only one well.

Secret to the remarkable performance of Cameron "Flex-Seal" Mud Line Valves is the renewable resilient flow-way insert which absorbs the abrasive and erosive action of the drilling fluid and continues to provide a pressure-tight seat for the heat-treated steel gate until the reserve of resilient material is depleted. (In closed position, the valve stem indicates the quantity of resilient material in reserve.) When finally worn out, the flow-way insert can be quickly and economically replaced in the field with ordinary rig tools.

Cameron "Flex-Seals" are the only valves designed expressly for mud line service. Operators' records reveal that they last 5 times longer and require only one-third the maintenance of conventional mud valves and stop cocks. Try them on your rig for a first hand check on their economy and operating features.

CAMERON IRON WORKS, INC.

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Fig. F-613

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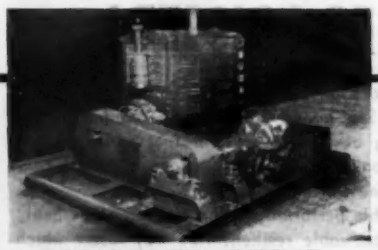

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Portable Rod Rack Speeds Well Pulling Operation

Welded up from scrap sucker rod, this stand is spotted to support slack in rods and speed re-running.

WELL SERVICING

A shop-made, portable type of rod hold-back that is giving good service to one operator consists of a rack, made of salvaged sucker rod materials, that is sturdy enough to support a full load of rods at any position desired on the derrick floor, yet, which may be moved about from well to well without leaving any permanent fixtures attached to the rig structure.

The rack is of all-welded construction, made with pieces of sucker rod, some being bent to bring out a basket-like shape which cradles the rods and prevents shifting of the load. The size of the support may be modified to match the quantity of rods run into wells normally serviced with this rack, but the method of securing it to the flooring is essentially the same. Two holes are drilled into the wooden flooring at the spot designated for the location of the two back legs of the rack.

The stand previously is prepared by turning up the lower inch or two of each of the two rear legs, bringing the upturned parts to approximately horizontal and pointing them toward the rear. When the rack is set up on the floor, it is first tilted back to allow the bent portions of the legs to enter the holes, then it is set back until the entire rack is resting squarely on the floor. Quickly and inexpensively built, the rack is instrumental in saving much time on pulling jobs.

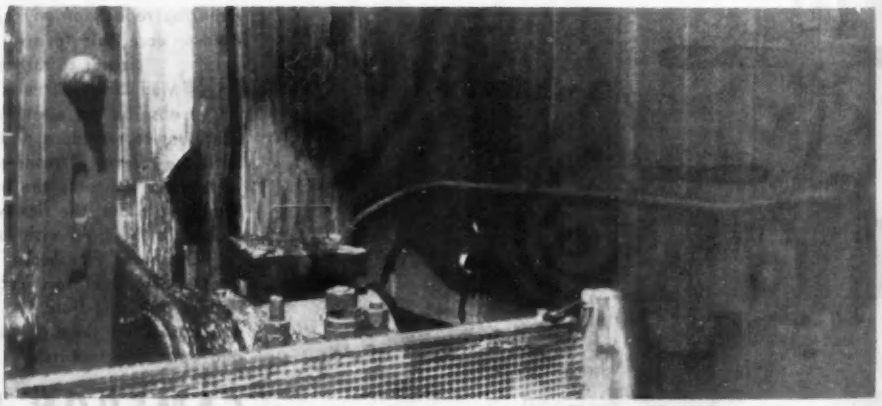
Remote Oil Reservoir Insures Bearing Service

PUMPING SAFETY

To eliminate having to shut down the well every time the crank bearings are oiled, one production superintendent devised a simple remote-filling reservoir system that also permits the pumper to replenish the container without incurring risk of becoming entangled in the moving pitman or crank. Over the old waste box atop the large bearing cap was placed a shop-made, light steel rectangular box, the tight-fitting cover of which is removable. In one corner of the cover is a short nipple of 1-inch pipe welded into it at a slight angle to permit entry of a long smaller pipe coming out from the bottom of a small filling reservoir or funnel strapped to the wall of the belt hall. This filler neck pipe is located several feet outside the arc of travel of the crank.

Flow of oil into the inner bearing is restricted by waste and since the box will hold a quantity of oil considerably greater than the original reservoir, fewer trips to the well for that servicing are necessary. In order to give the pumper some idea as to how much fluid remains in the reservoir, a small float attached to a short upright pin was installed, the latter projecting through a hole in the cover. The overlapping cover provides excellent protection from dust and moisture, assuring clean oil for the bearing at all times.

To prevent the collection of dust in the funnel, it is well to provide a cap which seals it except when used for directing flow of lubricant.



Flexible piping between filling funnel in belt hall and nipple welded or screwed into bearing cap insures flow of lubricant without need for risking blow from revolving crank or pitman.

Heavy Drafts on Stocks of Fuel Oils Continue Despite Peak Refinery Runs

Operations of the industry were at very high levels and still did not prevent heavy drawing on stocks of both light and heavy fuel oils in the week ended February 24, while gasoline went to storage only in normal volume for the season. These net results ocurred with refinery runs setting a new all-time record and with crude oil production off only 3000 barrels a day from the all-time peak of the previous week.

U. S. crude output averaged 4,777,000 barrels daily in the week of February 14, compared with the record high of 4,780,000 the week before. It was 354,000 barrels a day or 8 percent more than the production of 4,423,000 barrels a day in the week ended February 26 a year ago.

Crude runs to stills at U. S. refineries rose to a new peak of 4,803,000 barrels per day, up 16,000 from the week before and 382,000 a day or 8.6 percent above runs in the corresponding week last year. The runs were 26,000 barrels a day in excess of domestic production, indicating large use during the week of imported crude and/or stored crude.

Stocks of refinable crude totaled 220,060,000 barrels on February 17, the Bureau of Mines reported. They had recovered by 1,166,000 barrels from the 23-year low of 218,894,000 barrels as of February 10.

Production of gasoline, including natural blended at refineries, averaged 2,214,000 barrels daily in the week of February 24, up 84,000 from the week before and an increase of 381,000 daily or 21 percent over the production in the like week a year ago. Stocks of finished and unfinished gasoline accumulated during the week at the rate of 184,000 barrels daily and rose to 95,972,000 barrels. That amount was 11,580,000 barrels or 14 percent more than the 84,392,000 barrels in storage February 26, 1944.

Gasoil and distillate fuel oil production of 708,000 barrels per day was 14,000 a day less than in the previous week but 34,000 a day or 5 percent more than output in the like week a year ago. Stocks of these light fuel oils continued to diminish under heavy seasonal demand by 159,000 barrels per day. They declined to 28,753,000 barrels, an amount 5,136,000 barrels or 15 percent less than the 33,889,000 barrels held a year previously.

Residual fuel oil production of 1,298,000 barrels daily in the week of February 24 was 21,000 a day less than in the previous week although 37,000 a day or 3 percent more than output in the like week last year. Stocks were brought down at the rate of 217,000 barrels daily to a new low for modern times of 46,723,000 barrels. That quantity was 5,156,000 barrels or 10 percent less than the 51,879,000 barrels held February 26 last year.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
High:												
1941	4,337	11–22	4,120	10–18	266,187	3–29	99,727	3–29	[1]54,983	11–15	102,448	1– 4
1942	4,337	2– 7	3,961	1– 3	263,208	3–28	[1]109,281	3–14	47,861	11–14	95,857	1– 3
1943	4,436	11–13	4,331	12– 4	245,752	5–29	94,159	3–20	47,187	11–27	72,881	1– 2
1944	4,762	9–30	4,798	12–30	240,992	1– 1	89,162	4– 1	48,863	10–28	64,644	10– 7
1945	[1]4,780	2–17	[1]4,803	2–24	221,628	1–20	95,972	2–24	38,298	1– 6	56,074	1– 6
Lows:												
1939	[3]1,601	8–26	3,125	2–18	[2]229,127	10–12	71,152	10– 7	20,722	4–15	105,397	4– 8
1941	3,364	1–11	3,490	1–18	240,399	11–15	79,923	10– 4	28,382	4–12	90,914	7–12
1942	3,297	7– 4	3,393	5–23	231,896	12–12	75,934	12– 5	29,240	4–25	72,962	12–26
1943	3,821	1– 9	3,579	3–13	232,191	1– 9	68,182	10–16	30,732	4– 3	57,596	12–25
1944	4,357	1– 1	4,228	2–12	220,258	9– 9	76,302	1– 1	30,232	4–29	49,737	3–18
1945	4,678	1– 6	4,656	1– 6	[4]218,894	2–10	86,616	1– 6	28,753	2–24	46,723	2–24

TRENDS OF 1944 AND 1945

Trends in Week Ended:	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,330
January 29	4,409	4,359	240,251	13,427	81,075	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	33,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,013	51,669
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,462	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,453	8,680	59,839
September 30	4,762	4,775	222,393	14,494	78,028	4,622	45,329	9,292	64,226
October 28	4,740	4,658	223,235	14,117	79,058	4,772	48,705	8,985	64,382
December 2	4,712	4,693	221,591	14,853	80,427	4,082	45,832	8,981	61,727
December 9	4,704	4,552	[4]220,258	14,611	80,880	4,056	44,436	8,923	60,458
December 16	4,695	4,537	222,075	14,145	82,747	4,353	42,413	8,727	59,280
December 23	4,729	4,682	222,575	14,635	83,355	4,605	40,846	8,798	58,509
December 30	4,705	4,798	222,998	15,342	86,614	4,257	39,495	9,156	57,430
1945:									
January 6	4,678	4,656	220,331	14,472	86,616	4,533	38,298	9,092	56,074
January 13	4,722	4,570	221,114	14,139	87,814	4,408	36,410	8,993	54,207
January 20	4,733	4,686	221,628	14,554	88,708	4,586	35,041	9,082	52,554
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,651	9,252	51,119
February 3	4,723	4,662	221,674	14,535	91,034	4,559	32,370	9,377	50,451
February 10	4,728	4,770	[4]218,894	14,996	92,455	4,565	30,544	9,237	48,845
February 17	4,780	4,787	220,060	14,910	94,680	5,053	29,864	9,234	48,240
February 24, 1945	4,777	[1]4,803	.....	15,500	95,972	4,958	28,753	9,084	46,723
February 26, 1944	4,423	4,421	[5]237,511	12,834	84,392	4,720	33,889	8,825	51,879
Change:									
In week	—3	+16	+1,166	+590	+1,292	—95	—1,111	—150	—1,517
In year	+354	+382	—17,451	+2,666	+11,580	+238	—5,136	+259	—5,156
In year	+7.9%	+8.6%	—7.3%	+20.8%	+13.7%	+5.0%	—15.2%	+2.9%	—9.9%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, February 19, 1945.

On Engineering Group

Roy E. Carter of Odessa, manager of Amon G. Carter's properties, T. J. Dorsey, Atlantic Refining Company, Dallas, and P. D. Grommon, Jr., The Texas Company, Midland, were elected members of the advisory subcommittee of the North Basin Pools Engineering Committee, which held its sixth annual meeting recently at Fort Worth, Texas. V. E. Cottingham, Midland, was retained as chairman, while the following were re-elected: A. S. Donnelly, Honolulu Oil Corporation; Jimmy Low, Amerada Petroleum Corporation; R. R. Porterfield, Devonian Oil Company; and C. C. Roripaugh, Shell Oil Company, all of Midland. This group represents producers in the Seminole, Slaughter, Wasson, Ownby, Waples Platter and Dean areas.

Editorial Award

Lion Oil News, monthly publication of Lion Oil Refining and Lion Chemical Corporation, El Dorado, Arkansas, has been given three "superior" awards for merit by the Southwestern Association of Industrial Editors. The award was for excellence in appearance, in editorial content, and for service during 1944.

The association includes the states of Arkansas, Oklahoma, Kansas, Louisiana, Missouri, Illinois, Nebraska and Texas.

Pipe Line Review

Approval Is Sought for Oklahoma-Michigan Line

Permission to build a 1085-mile natural gas line from Oklahoma to the vicinity of Detroit, Michigan, and Toledo, Ohio, has been asked by The American Light and Traction Company.

The line would carry about 145 million cubic feet of natural gas daily and would cost about $51,500,000. The company hopes to start work by May 1 and finish the job by December 31.

11-Mile, 6-Inch Gas Line In Pecos County Approved

Cardinal Oil Company, San Angelo, Texas, has been given equipment priorities for the construction of an 11-mile 6-inch well-pressure natural gas line from the Mac-Der gas field, Pecos County sector of West Texas, to the West Texas Utilities Company's electric power generating plant in H&TC Ry. 11, Block 31, Crockett County, near Girvin.

This unit will supplement the company's delivery of 6,000,000 feet of gas daily to the plant through a small line connecting the Walker and White-Baker shallow areas, Pecos County.

Routes for Colorado-Utah Pipe Line Being Studied

Utah Oil and Refining Company is studying two possible routes for pipe line from the Rangely field, Colorado, to its refinery terminus in Salt Lake City, Utah.

One route would require 90 miles of line from the field to Craig, Colorado. At this point the line would connect with the recently completed 8-inch, 111-mile line to Wamsutter, Wyoming, which is connected with the 8-inch line across southern Wyoming to Salt Lake City.

A second proposed plan offering the advantage of an increased total delivery to Salt Lake City consists of an independent line, direct from Rangely to Salt Lake City, a distance of approximately 200 miles.

TGT Line's Capacity to Be Increased by 30 Percent

To "prevent a serious and prolonged interruption to war production" next winter, the War Production Board has requested Tennessee Gas and Transmission Company to increase the capacity of its new Texas-West Virginia natural gas pipe line 30 percent by November 1. The line, which was constructed to meet shortages which WPB predicted would develop this winter, is now carrying more than 200,000,000 cubic feet of gas daily to the strategic Appalachian industrial area.

The War Production Board has certified the project to the Defense Plant Corporation as extremely necessary to the war effort, thus making DPC facilities available for financing the construction.

Tennessee Gas completed its 1265-mile line in less than a year and began pumping gas October 31.

Edward Falck, director of the Office of War Utilities, pointed out in a letter to Gardiner Symonds, president of Tennessee Gas, that even with the completion of the Tennessee line "it has been necessary to curtail war production and essential civilian loads during periods of extremely cold weather. Such curtailments during December, 1944, and January, 1945, has been frequent and have resulted in substantial interruption to vital war production."

In compliance with the request of WPB, the capacity of the line will be increased by the construction of four compressor stations. The resulting increase in compression will enable the line to carry 60,000,00 additional cubic feet of gas daily. This gas will be obtained from fields other than Stratton-Ague Dulce, the present source of the line's supplies.

U. S. Builds 579 Tankers Since Start of the War

Since the start of the war in Europe American shipyards have produced 579 new tankers of 9,085,939 deadweight tons, with propelling machinery totaling 4,711,884 horsepower, according to J. Lewis Luckenbach, president of American Bureau of Shipping.

Such a building program, he said, has more than made up the Allied losses due to sinkings and puts the United States in a dominant position so far as tanker tonnage is concerned.

Luckenbach revealed that in September 1939 there were in the world 1507 tanker vessels, of 16,008,300 deadweight tons, with 1033 flying the flags of the United States, Great Britain and Norway. Losses by the two latter countries in tanker tonnage have been particularly severe.

He pointed out that with 238 tankers still under contract to be built the United States should, by the end of 1945, control approximately 1000 of these ships—or 13,000,000 deadweight tons. This fleet will then equal in capacity that of the entire prewar world fleet, since operating speeds of the new type vessels are 25 percent higher than for older types.

Luckenbach also announced that a new record for tank ship construction was established in 1944 in the production of the 240 vessels by American yards, exceeding by 500,000 deadweight tons the output of 1943. The 240 tankers were produced by 7 shipyards, the Sun Company building 69, Kaiser Swan Island yard 64, and 44 each by Marinship Corporation and Alabama Dry Dock & Shipbuilding Company. Three remaining companies turned out a total of 39 vessels.

Turbo-electric propulsion machinery was installed in 221 of the tankers. Also completed in 1944 was one of the largest bulk tankers in the world — the "Phoenix," of over 22,000 deadweight tons. Five sister ships will be built this year.

Work on Line Begins

Sharman and Allen, Houston contractors, last week began laying 81 miles of 4-inch line from Humble Oil & Refining Company's cycling plant at Katy, Texas, to the Dow Chemical Company plant at Freeport.

Magnolia Given Priorities For Five Pumping Units

Magnolia Pipe Line Company has been granted priorities to install 5 new electric motor-driven centrifugal pumping units a 3 booster stations on its 12-inch trunk line from its West Texas terminal near Midland to Corsicana.

Clyde and Walnut Springs stations will be allotted 2 units each, and one at Mertens, while smaller type units now in service will be transferred to Midland station.

The added equipment will increase the annual daily average capacity of the line from 55,000 to 62,000 barrels, operating at 700 pounds working pressure. No change is contemplated in the capacity of the company's 8-inch "sweet" crude line that extends from Midland via Corsicana to Beaumont, and currently rated at 22,000 barrels daily.

Inbound and Outbound Oil For 1944 Show Huge Gain

Shipments and receipts of bulk petroleum cargo in United States ports, excluding United States military cargo, approximated 30,000,000 long tons in 1944, it was reported January 31 by the War Shipping Administration.

Liquid cargo carried inbound and outbound during the year exceeded the total carried in 1943 by more than 55 percent, with outbound shipments alone averaging 1,750,000 long tons monthly, the WSA said, taking time out to compute that, transposed into terms of fuel oil, the petroleum load "would heat an average American home for nearly 8 million years." It was not revealed, however, whether this would be at the 65° temperature called for by rationing or at more comfortable temperatures desired by householders.

"Since 1934," the administration explained, "the tanker industry has maintained the supply of oil for mechanical equipment and aviation gasoline for fighting aircraft and bombers for United Nations' fighting forces. Before our active entry in war a shuttle service was established between Gulf and north of Hatteras ports, and foreign flag tonnage was diverted from customary trade routes to supply the allied nations with needed petroleum products."

The Maritime Commission's long-range building program began with deliveries early in 1939 of the high speed national defense type tankers that were the mainstay of the tanker fleet when we entered the war. Since that time, 640 tankers of 9,374,000 deadweight tons have been put into service by Maritime Commission construction, the figure including ocean, inland and military types.

Work on Plant Begins

Construction work has been started in the Defense Plant Corporation's second carbon black plant in the Seagraves sector of West Texas, and the plant will be leased to the Columbia Carbon Company. Using the channel type, it will utilize 21,000,000 feet of gas to be supplied through a 14-mile, 20-inch line by Phillips Petroleum Company's Seminole natural gasoline plant.

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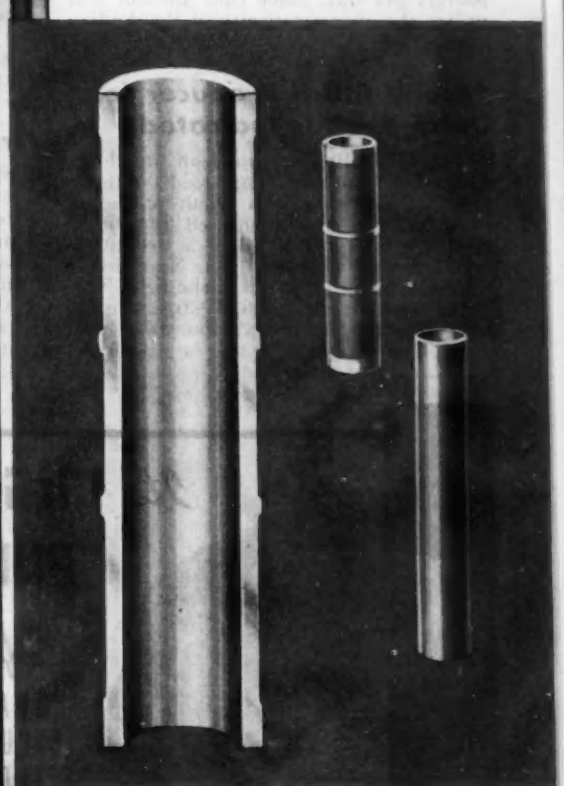

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International Developments

Casabe Field, Colombia, Has 26 Producing Wells

Royal Dutch Shell's Casabe field, on the west side of the upper Magdalena River, Colombia, was given its twenty-sixth successful completion February 2, when well No. 27 flowed 935 barrels of 22-gravity oil through ¾-inch choke on initial production test. Production potentials of the 26 commercial wells range up to 1200 barrels per day, and average about 700 barrels.

Although shipment of Casabe oil to Cartagena was scheduled to start in January, via the Andian pipe line, no oil was moving out of the field at the end of February, because of delays in making pipe line connection. Shipments from the field will not exceed 15,000 barrels per day, since that amount will utilize the excess capacity of the Andian line.

Second Dificil Producer for Dutch Shell Is Indicated

Dutch Shell operations in northern Colombia had an improved outlook early in February as a result of promising saturation encountered in Dificil 4, which was being given a drill-stem test February 8 at 5680 feet. No. 5 location was being prepared in the field. The initial test of the Dificil structure in 1943 resulted in completion of a gas well. The second test was a dry hole, but well No. 3, drilled in 1944, was completed as a commercial well.

In Shell's San Angel concession, immediately north of the Dificil block, well No. 3 was standing at 4860 feet in the middle of February, after being cored below 4700 feet.

In the Doce concession, southeast of the Dificil block, Brillante 2 was being drill-stem tested at 4800 feet February 5 after encountering an oil show.

More Mackensie River Explorations Planned

Imperial Oil Company will have four exploration parties along Canada's Mackensie River Valley below Norman Wells during the current year to appraise drilling prospects of the company's huge petroleum reservation that extends 125 miles along both sides of the river. Two geological parties, one seismograph party and one gravimetric party are scheduled to be at work by the middle of May.

Firm Changes Name

Sindicato de Inversiones, S. A., the Socony-Vacuum Oil Company and Tropical Oil Companys' joint interest firm, which holds the Floresanto concession in western Bolivar, near the Panama border, has changed its name to the Sinu Oil Company. The company is still engaged in drilling the Floresanto 1 wildcat, started about a year ago.

43 Completions Registered For Monagas Area in 1944

Consolidada (Sinclair) operations in the Santa Barbara producing area of Monagas, Venezuela, resulted in 43 completions during 1944. Of the nine strings of tools which the company had available there for drilling in the Santa Barbara and Muri fields, only seven were kept in operation due to lack of materials and supplies and the necessity of robbing to keep the seven outfits in operating condition.

The company plans to have 13 rigs in operation in the area during most of 1945, and will drill a number of wildcats on recently acquired tracts adjoining producing concessions.

Shipments of oil through the company pipe line to Puerto la Cruz averaged 35,000 barrels per day in 1944, of which nearly 5000 barrels consisted of Pantepac royalty oil from Creole-operated wells in the Mulata field, immediately east of the Santa Barbara field.

Four Drilling Operations Now Underway In Barco

Colombian Petroleum Company has completed and shut in well No. 14 in the Socuavo field of the Barco concession, and had four other operations in progress at Socuavo and Tres Bocas in mid-February.

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U. S. Field Operations

Oklahoma

Crescent Pool Receives Southwest Extension

Major stratigraphic trap looms in Cement area; Continental extends Crescent pool; oil found in shallow Ada gas district; sleet, snow slows Oklahoma work.

Caddo County: A deep-seated stratigraphic trap appears to have been located in the southeast sector of the Cement pool where Henry Schaffer, Inc.'s Cook 1, NE SE NE 35-5n-9w, logged approximately 230 feet of stained and saturated Medrano sand and was preparing to set pipe for a test. Top of the Medrano was logged at 8830 feet, which is about 1000 feet deeper than the sand is found in the Cement pool. Saturation was logged from 8860-9107 feet, with some breaks in the formation. The strike is considered important, as the Cement pool is one of the largest in southwestern Oklahoma.

The Cook well was started in 1943 and temporarily abandoned in January, 1944. Drilling was resumed in November, but little attention was given the operation until results of the electrolog were released.

Carter County: Continental Oil Company has given the Crescent pool a ½-mile southwest extension at Dotson 1, SW NE NW 7-2s-3w. With production string set at 6309 feet and at total depth of 6487 feet, the well swabbed 125 barrels of oil in 13 hours, lowering the fluid to 600 feet from bottom. Testing continues.

Pontotoc County: Senora Oil & Gas Company's Skirvin-Tyson 1, SE NE NE 17-4n-6e, in the shallow Ada gas pool, flowed 12 barrels of oil an hour in a Hunton line test. The well was drilled to 2712 feet and tested water. It was plugged back to 2604 feet and pipe set to test the Hunton topped at 2415 feet.

Grady County: East of the Chickasha gas area, Magnolia Petroleum Company reported 9 feet of sand with stain and odor at Cunningham 1, deep wildcat test in CSE SE 33-5n-6w. Core was pulled at 10,399-409 feet. The test is considered a test of deep possibilities in the Anadarko Basin. Oil production exists at the Cement pool to the northwest and in the Knox area, almost 12 miles southeast.

McClain County: Deep Anadarko Basin play received a serious setback as The Carter Oil Company announced it would abandon Johnson 1, CSW NE 30-8n-2w, in the Goldsby area, west of the Nemaha Ridge. Bottomed at 8267 feet in sandy shale, electrolog survey was run to 8262 feet. Cores were pulled at 8225-8231 feet which showed slight stains and odor but a drill-stem test recovered mud and salt water. Carter has done considerable exploratory work along the east flank of the Basin and so far has developed 2 areas which are producing from Ordovician measures.

Washita County: The California Company gave the plug and abandon order at its first Oklahoma test, Reeder 1, CNE NW 1-8n-17w, deepest wildcat in the state. The hole was carried to 11,130 feet and backed up to test 2 zones between 8000 and 9000 feet without results.

West Edmond: Recent bottom-hole tests in the 4-county West Edmond pool shows reservoir pressure in the Hunton lime zone continues to decline at a rate of about a pound a day, while gas-oil ratios appear to be increasing in the east-central sector. Of 30 wells tested for gas-oil ratio, 13 were making in excess of 2000 feet of gas per barrel of oil. Meanwhile, development continues and the field has passed the 400-well mark with operators reporting 6 new completions in a week.

Logan County: Testing was resumed at Fox & Fox's Hudson 2, SW SE SE 26-17n-4w, seen as a possible connecting link for Lovell and Southeast Lovell. The well blew out of control twice recently. Sand was topped and pipe set at 4868 feet, total depth 4916 feet. When plug was drilled the well cleaned itself, blowing tools out of the hole and flowing an estimated 150 barrels of oil in a few hours before being shut in. Production is from Layton sand.

A heavy sleet and snow storm which blanketed practically all the state's oil area resulted in almost a complete shutdown of operations during the first part of the week. In West Edmond more than half of the 100 plus rigs were idle for 48 hours because of the storm and muddy roads.

Kansas

50 Barrels Daily Pumped By Wildcat Near Ogallah

Wildcat near Ogallah pumps 50 barrels daily; Sumner County test cores saturated Bartlesville sand; Stanolind runs pipe and tests wildcats in Hugoton area; Faulkner well swabs 50 barrels of oil per day.

Trego County: Harber & Lee Greenburg's Cotton 1, SW SW NE 15-12s-21w, improves prospects for good production in the region of the 1-well Ogallah pool. Operators, after acidizing the Kansas City zone at 3962-78 feet, pumped 50 barrels a day and reported the Arbuckle lime normal with the Ogallah producer.

Sumner County: Coring saturated Bartlesville sand from 3271-76 feet, El Dorado Refining Company set pipe and

Wells Completed in the United States in Week Ended March 3, 1945

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS This Week	Last Week	Cumulative This Year	Cumulative Last Year
Alabama													3	2
Arizona														1
Arkansas												3	22	27
California	37	2			39						39	35	336	285
Colorado	1				1						1		6	4
Florida													1	
Georgia													2	1
Illinois	18			6	24	5	1		2	3	32	22	347	263
Indiana	3			1	4				1	1	5	4	46	59
Iowa													1	2
Kansas									3	3	3	21	213	310
Kentucky	3				3				3	3	6	9	84	106
Louisiana	8				8		1	1	3	5	13	15	150	97
North Louisiana	3				3			1	2	3	6	4	56	30
South Louisiana	5				5		1		1	2	7	11	94	67
Michigan	7			9	16				8	8	24		120	100
Mississippi	3			2	5				3	3	8	5	59	14
Missouri									1	1	1		7	3
Montana	6	1		3	10						10		32	43
Nebraska													1	7
New Mexico	6			2	8				3	3	11	6	85	63
New York	15		10		25						25	25	162	198
Ohio	3	3			6						6	5	88	140
Oklahoma	28			8	36	1			4	4	41	43	389	244
Pennsylvania	27	4	15	2	48						48	45	383	454
Tennessee														3
Texas	60	8		21	89	2	6		23	29	120	167	1,099	819
E.Tex.Bor. Co.'s												4	9	4
E. Texas Field														1
Rest of E. Texas	1	1			2				1	1	3	1	35	45
North Texas	17			10	27		1		5	6	33	24	260	175
W. Central Tex.	4	2		3	9						9	1	53	63
West Texas	25			1	26	2	1		4	5	33	79	282	214
Tex. Panhandle	2	1			3				2	2	5	11	96	28
G. Coast, Upper	2	1		2	5		2		2	4	9	15	109	79
G. Coast, Lower	7	2		2	11				5	5	16	19	166	145
Southwest Texas	1	1		3	5		2		3	5	10	12	79	52
S. Central Tex.	1				1				1	1	2	1	10	13
West Virginia	1	13		2	16						16	12	122	158
Wyoming	7				7		1			1	8		28	23
Total U. S.	233	31	25	56	345	8	9	1	54	64	417	417	3,786	3,426

* Includes distillate wells. † Includes salt water disposal wells.

was preparing for production test at Patterson 1, SEC NE 23-33s-2e. The wildcat is about a mile northwest of the Rainbow Bend West pool.

Graham County: Approximately 10 miles southwest of the Morel pool, Wood River Oil Company's Faulkner 1, SW SE SE 27-10s-22w, continues to improve on test and after acidizing with 1450 gallons in the Marmaton formation at 3629-33 feet, was swabbing 50 barrels of clean oil daily.

Stanton County: Stanolind Oil & Gas Company continues to recover only small quantities of gas in tests at CC&P 1, center of 31-28s-39w, about 9 miles west of the Hugton gas pool. At 2627 feet in the Wreford, which showed some water, operator plugged back to test gas-bearing Herington, Krider, Winfield and Ft. Riley formations and recovered between 200,000 and 550,000 cubic feet of gas. The test has the earmarks of a west edge Hugoton well. About 10 miles west of the Hugoton area Stanolind set pipe at 2388 feet, total depth, and was preparing for production test at Fegan 1, center of 3-27s-39w, rigging up cable tools. Herington was topped at 2383 feet with no shows reported.

New oil production for Kansas during the week totalled 7210 barrels daily from 21 new producers, coming within 500 barrels of equalling this year's best weekly production figure in the week ended January 26. Snow storms and slick roads continue to hamper Kansas operations.

Missouri

Platte County: Fell & Reid's Klam 1, wildcat in SE SE SE 19-51n-35w, tested about 85,000 cubic feet of gas in the Peru sand at 440-57 feet and was drilling below 780 feet. Lee Fox's Fee 1, SE SE SW 12-51n-35w, was shut down at 670 feet on account of bad weather.

New Madrid County: U. S. Bureau of Mines' Oliver 1, CSW SW 29-22n-11e, was drilling below 2942 feet after having trouble with circulation. The test is projected to 5000 feet.

Stoddard County: M. H. Marr et al's Barnett 1, CSW SW 3-25n-11e, was drilling below 3263 feet; G. E. Kinder et al's Rehms 1, SE NE 32-28n-11e, was shut down at 935 feet.

Jackson County: Francis et al's Liggett 1, SW SE SE 11-48n-31w, reported a slight oil show in the Big Lake sand at 110-45 feet and was drilling below 180 feet.

Two Additions Announced For Gas Technology Staff

Morris Fisher and Dr. Sidney Katz have been added to the technical staff of the Institute of Gas Technology, 3325 South Dearborn Street, Chicago.

Fisher, a specialist in micrometrics, has been assigned to work on an improved method of producing carbon black. He was a chemist for eight years with the United States Bureau of Mines at Pittsburgh, and during the last year has done research on a special project at Columbia University.

Katz will work in the field of gas chemistry, particularly in the physical chemistry of fundamental gasification reactions. His first assignment is a special project for the National Research Council. He has experience as a research chemist, has lectured in mathematics at Illinois Institute of Technology and in 1937 he was awarded a traveling fellowship in chemistry by the Royal Society of Canada.

New Mexico

Skelly Field Assured of Clear Fork Production

Oil production from the Clear Fork assured for the Skelly field; wildcat near east border of Lea County logs additional oil pay in Lower Clear Fork, while another prospect has set pipe to test 2 zones in San Andres.

Lea County: Skelly Oil Company's Steeler 2, offsetting a gasser in the Skelly field, logged the Tubb (Clear Fork) sand at 6140-6201 feet with shows of gas and 40-gravity oil with improved saturation in the lime series at 6545-65 and maximum porosity and saturation at 6580-6600 feet. Contract depth was fulfilled at 6606 feet, where drill-stem test was due before running pipe for completion. Steeler 2 is 6 miles southwest of the Penrose Deep, or Drinkard area.

Gulf Oil Corporation's State-Andrews 1, C NW NE 32-22s-38e, 1⅝ miles southeast of its Penrose Deep area discovery in Upper Clear Fork, improved its production outlook and passed through the pay in drilling to 7047 feet, where operations were halted for rig repairs. Pipe likely will be set on bottom to complete through perforations because of the high-gas yield with oil flow. The last drill-stem test at 6890-6995 feet yielded gas to surface in 4 minutes and oil in 16 minutes, with flow rated at 10 to 20 barrels of 38-gravity oil hourly and 3,750,000 feet of gas daily.

The company is starting Higgins 1, ½-mile north and on an 80-acre lease that expires in October. Gulf Oil Corporation's Gutman 1, north offset to its Penrose Deep area, tested dry through perforations in the Lower Clear Fork at 6845-6960 feet, and will plug back to the 6400-foot discovery pay.

The Texas Company's Eaves 1, C SE NE 26-16s-38e, 11 miles northeast of the Hobbs field, cemented 7-inch casing at 5160 feet to make open hole test of oil saturation at 5573-78 feet in the equivalent of the Seminole field pay, and also in the Wasson field zone at 5640-67 feet. Top of San Andres was called at 5030 feet with elevation of 3697 feet.

E. J. McCurdy, Jr., et al's State-Young 1, 2¾ miles south by west of the Maljamar field and a separate structure, flowed 376 barrels of 38.5-gravity oil potential natural through open tubing from Queen sand at 3765-83 feet.

West Texas

Upton County Wildcat Has Oil Flow While Drilling

Upton County wildcat, 14 miles northwest of Big Lake field, nearest production, makes high-gravity oil flow while drilling; Western Ector County deep area extended 2⅞ miles southeast to indicate big productive area; Andrews County wildcat setting pipe after logging more pay; two Gaines County areas add new oil zones.

Upton County: Humble Oil & Refining Company's Parrott 1, C SE SE Sec. 3, E. L. & Ry. Survey and 14 miles northwest of the Big Lake field, nearest production, flowed while drilling soft zone at 9550-76 feet, making an estimated 200 barrels of 40-gravity oil through drill pipe in 6 hours by heads. The flow settled to occasional heads the next 12 hours, resulting in pressure buildup for a greater output through ⅝-inch outlet. The gas volume was estimated at 500,000 cubic feet daily.

Parrott 1 made an unsuccessful try for commercial production after acidizing perforations opposite broken saturation between 7250-7500 feet, and was proceeding to the Ellenburger. The oil flow is from the Pennsylvanian, or Devonian.

Parrott 1 is 3½ miles northwest of Plymouth Oil Company's Alford 1, which entered the Lower Pennsylvanian at 9590 feet and Devonian at 10,018 feet with elevation of 2669 feet, then temporarily abandoned in Devonian at 10,384 feet by mudding hole.

Ector County: Rowan Drilling Company's T. P. Land Trust 1, C NW SE T&P Ry. 29, Block 45, 2⅞ miles southeast of the TXL field's sweet-crude discovery in Devonian at 7886-8020 feet, entered the Devonian at 7826 feet, being 47 feet low, and flowed oil and gas when tester was used at 7832-76 feet in porous lime. Additional pay was logged in coring and drilling to 7893 feet with plans to take in the entire section before running pipe for completion. The 80-acre site requires production by May 17. The Texas Company's T. P. Land Trust 1-B, 1½ miles southwest of the above prospect and 380 feet lower on the Devonian, was drilling lime at 8525 feet, having logged nominal saturation and porosity in the Devonian. Ten additional tests are drilling, else preparing to start along a northwest-southeast trend from the TXL field discovery, and if productive each will require 2 or more offsets.

Andrews County: Sun Oil Company's Martin 1, previously indicated discovery and the shallowest of 3 prospects on a general trend between the embar and Fullerton fields, was running 7-inch pipe to complete at 7036 feet in broken Fullerton pay, topped at 6790 feet, rather than risk sealing off this zone with mud in carrying out original plans for an Ellenburger test.

Completion orders followed a drill-stem test at 6980-7036 feet that returned 90 feet of free oil, 720 feet of oil and gas-cut water blanket and 540 feet of heavily oil- and gas-cut mud. Stanolind Oil & Gas Company's University 1-D, Devonian discovery, was awaiting official gauge after flowing 170 barrels, averaging 4 percent basic sediment and acid sludge, on 8-hour test through 2-inch from perforations at 8300-50 feet, having plugged back from 10,466 feet.

Magnolia Petroleum Company's Lowe-Bitler 1-E, C SW NW PSL 1, Block A-32, assures a ½-mile northeast extension of the Fullerton field and within a mile of a failure, in entering pay at 6980 feet, or 68 feet low, and was testing at 7012 feet. The company's Ralph 1-A, west outpost, was coring for Simpson-Ellenburger contact at 10,565 feet, being the first Ordovician test for the area.

Winkler County: Gulf Oil Corporation's Keystone 49-E, ¾-mile southwest of southerly Ellenburger producer in the Keystone area, flowed 1193 barrels of 43.6-gravity oil, gas-oil ratio 1700/1, through ½-inch choke from perforations at 9625-9975 feet, having plugged back from water at 10,150 feet.

Sinclair Prairie Oil Company's Walton 6-A, northwest extension, flowed

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1560 barrels potential, gas-oil ratio 1500/1, on ½-inch choke from open hole at 9865-9940 feet, bottomed in granite at 9958 feet.

Crockett County: Amerada Petroleum Corporation et al's Todd 7-A, C SE NE GC&SF Ry. 25, is the first producing completion for the Ellenburger in the Todd Deep area although previous tests on the northeast and east portion of the steep structure indicated commercial production before plugging back for completion in the regular Crinoidal.

Todd 7-A flowed 130 barrels oil natural on 7-hour gauge through ¾-inch choke from perforations at 5786-5910 feet in Crinoidal, topped at 5779 feet with elevation of 2622 feet. This zone was squeezed, then the well flowed 213 barrels natural in 7 hours from perforations at 6232-6318 feet in Ellenburger, topped at 6064 feet. Acid treatment with 1000 gallons stepped up the flow to 955 barrels of 41.9-gravity oil with gas-oil ratio of 455/1 in 10 hours through ¾-inch choke for completion.

Francis A. Callery et al's Shannon 1, ½-mile northeast and the highest structurally for the area, was swabbing 4 to 5 barrels oil hourly after using 1000 gallons of acid through perforations at 6160-6220 feet in Ellenburger, topped at 5925 feet with elevation of 2610 feet. No test was given the Crinoidal, topped at 5810 feet, followed by dry Simpson at 5885 feet.

Gaines County: Shell Oil Company's Pierson 1, C NE SW Sec. 452 and 1¼ miles east of the Russell 7-well field in the 7400-7800-foot Lower Clear Fork, established shallow pay in testing 56 barrels of 32.9-gravity oil and 1½ barrels of oil- and gas-cut mud when tester was used at 5995-6134 feet. This outpost entered the Clear Fork at 5920 feet with elevation of 3552 feet, being the highest structurally for the area, and logged 49 feet of net pay in broken porous zone at 6010-6130 feet.

Pierson I will continue to the regular pay before running pipe for completion. The Texas Company's Robertson 2, ¾-mile west of its Robertson pool discovery in Glorietta at 5910-52 feet, entered the Glorietta sand at 5840 feet and showed for a pumper after acidizing at 5986 feet, then deepened to 6455 feet, where it flowed 12 barrels oil hourly on preliminary test.

A portion of this flow is from the regular zone. The lower pay, tentatively identfied as Upper Clear Fork, was entered at 6360 feet. Separate production test is pending.

Fowler Heads Bureau's Station at Bartlesville

Dr. R. R. Sayers, director of the Bureau of Mines, announces the reassignment of N. A. C. Smith, supervising engineer of the petroleum experiment station at Bartlesville, Oklahoma, and the transfer of H. C. Fowler, assistant chief of the bureau's petroleum and natural gas division, Washington, D. C., to the position of Bartlesville supervising engineer.

In appointing Smith to a position of special assistant to the supervising engineer to handle specialized research and technical writing, Sayers paid tribute to the faithful services rendered by him in administering the Bartlesville Station. The reassignment was requested by Smith because his health was threatened by the increasingly heavy burden of administrative duties at the station.

North Texas

Strawn Oil Sand Logged By Clay County Wildcat

Southeastern Clay County wildcat logs 22 feet of Strawn oil sand; second producer assured for prolific pool in King County; Jack County deep discovery makes flow.

Clay County: Continental Oil Company's Thomas 1, NE NW Lot 34, Freestone CSL Sur. and 6⅓ miles southeast of the Buffalo Springs 1-well pool, tested 100 feet of free oil and 110 feet of heavily oil-cut mud with 1600 pounds bottom-hole pressure from Strawn sand at 4145-53 feet. Base of this pay was logged at 4167 feet, and the test was drilling shale at 4270 feet to fulfill 7500-foot Ellenburger contract.

The above showing is adequate to make a commercial well, and was also present, but not productive, in the company's Welch 1, a 6810-foot failure 1 mile west by south.

J. C. Jennings et al's Kempner 1, SEc Lot 17, Bosque County School Land Survey and 3 miles northwest of the new deep pool given Clay County by Anderson-Prichard Oil Corporation, tested 30 feet of oil-cut mud in Bend conglomerate at 5920-45 feet, and was drilling dolomite, probably Ellenburger, at 6375 feet.

Jack County: Panhandle Refining Company's Cherryhomes 1, R. S. Gorder Survey and 1⅝ miles northeast of the Worsham-Steed pool, flowed 37 barrels of oil per hour natural through ¾-inch choke on short test after cleaning itself from perforations at 5035-50 feet, having plugged back from 5092 feet. Production in the Worsham-Steed area is from the 4700-foot sand in the Smithwick.

King County: Ohio Oil Company's Ross 2, east offset to its Strawn discovery at 5239-57 feet, logged oil-saturated Strawn lime at 5305-14 feet, and drill-stem test yielded 775 feet of oil and gas-cut water blanket and 750 feet of oil and gas-cut mud with 2200 pounds bottom-hole pressure. Top of pay is about 20 feet low. It will be deepened to explore the section before running pipe.

East Texas

Henderson Wildcat Shows Promise in Travis Peak

Eastern Henderson County wildcat looks promising for production in Travis Peak; Larissa area has new oil zone. Freestone County's first Travis Peak strike makes big gas flow.

Henderson County: The Texas Company's Morse 1, S. Calderon Survey and 1½ miles southwest of Chandler, logged oil stain and odor at 10,314-10,380 feet with most effective porosity at 10,366-10,378 feet, and was coring below 10,410 feet. The Travis Peak was entered at 10,302 feet, or 155 feet high to a failure 4 miles southwest. The showing is considered adequate to warrant the setting of pipe for completion try in Morse 1. Humble Oil & Refining Company's Jones-Huddleston 1, Eustace prospect, resumed drilling after testing salt water in upper Glenrose at 7335-79 feet. Gulf Oil Corporation's Frizzell 1, Baxter area, was drilling barren Rodessa at 11,585 feet.

Smith County: Phillips Petroleum Company's Grelling 1, 3000 feet northwest of its South Tyler field prolific discovery in Rodessa at 9918-29 feet, was drilling sandy-shale 10,635 feet in Pettit, topped at 10,215 feet, and will continue to the Travis Peak before running pipe.

Cherokee County: Humble Oil & Refining Company's Stanley 1, 3600 feet south of its Larissa pool discovery in Pettit at 10,160 feet, flowed 71 barrels of fluid, averaging 50 percent 46-gravity oil and balance acid residue, with gas-oil ratio of 6041-1, on 21½-hour gauge through ½-inch choke after using 10,000 gallons of acid in upper Rodessa (Bacon) perforations at 9510-40 feet.

This gives the area a new producing zone. Stanley 1 failed in the Pettit, and tested a small volume of oil and water from perforations at 9570-9600 feet before squeezing.

Humble's new Birmingham 1, offsetting depleted Woodbine producers in the Rusk pool, Cherokee County, was drilling shale and lime at 8995 feet, having tested a normal show of gas with mud when tester was used on Upper Rodessa at 8853-8910 feet.

Freestone County: The Texas Company's McKnight 1, deep strike for the Fairfield area, tested 14,600,000 cubic feet of gas with 35 barrels of 60-gravity distillate per million from Travis Peak perforations at 8232-47 and 8275-97 feet. Closed-in pressure built up to 3175 pounds.

Wood County: Amerada Petroleum Corporation's Faulk 3, on the northwest corner of a 97-acre lease near apex of the Coke structure, will explore the Lower Trinity series to water in the Travis Peak. Location is 5000 feet west of its Turner 1, offsetting Paluxy production on the east, which was abandoned in Travis Peak at 8666-8901 feet. Gas for fuel and oil treating is needed in the Coke field.

South Central Texas

Oil Field Is Opened by Wildcat in Wilson County

Wildcat opens a new oil field in Wilson County and another is testing formations from which it is expected to produce.

Wilson County: L. D. Ormsby's Williamson Heirs 1, wildcat 9 miles northeast of Floresville, which opens a new field, has been estimated good for 300 to 500 barrels production daily with agitation, and the Railroad Commission has granted an allowable of 120 barrels daily. It has not yet completed storage tanks for regular production. Depth of this well is 5084 feet, with casing set at 2028 feet.

Stanolind Oil & Gas Company's J. E. Watkins 1, in the James Bradley Survey, is reported running potential test with casing perforated at 5144-52 feet. Few details have been released on this well, but it had tried to blow out while earlier making a drill-stem test at 5167 feet, and made a spray of 24-gravity oil. Depth is 5195 feet with casing at 5188 feet.

Atascosa County: In the Imogene

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field, Humble Oil & Refining Company has completed its Forsberg 1, at total depth 7617 feet, making 82.32 barrels of fluid, of which 79.85 barrels is net 38.7-gravity oil, from open hole at 7613-17 feet, flow being through a 3/16-in choke with tubing pressure 575 pounds.

In the Charlotte area, Humble has abandoned its B. K. Nixon 1, in H&GN Survey 77, at total depth of 7005 feet.

Russell County Wells

Operators in the Williamson pool of Russell County, Kansas, have been authorized by PAW to drill two wells on a 40-acre tract if the wells are completed or recompleted in such a manner that they will not produce from the same horizon at the same time. The pool is located in Tp. 14s-R14w.

Lower Texas Coast

Tulsita Field Opened as Bee Well Test Completed

Bee County discovery well completes production test to open Tulsita field; Sun Oil Company blowout south of Goliad in Goliad County indicates opening of an oil or gas field, but has drill stem stuck at 11,191 feet.

Bee County: Fred W. Shield has completed production test on his discovery in the Tulsita area, flowing from perforation at 7048-59 feet, and apparently activity will continue in the new area, with Shield moving rig to his Courtney 2, and Navarro Oil Company having made location for its Hartzendorf 1 as a south offset to the discovery. The field opener flowed through a ⅛-inch choke at the rate of 110 barrels of pipe line 37.8-gravity oil daily with tubing pressure 725 pounds and casing pressure 1125 pounds. Gas-oil ratio is 675-1. Total depth is 7504 feet with 5½-inch casing set at 7227 feet.

Goliad County: Sun Oil Company's R. A. Thompson 1, wildcat 5 miles southwest of Goliad in the Ignacio Guajardo Survey, blew out several days ago while coring at 11,191 feet, and started making gas and oil in unestimated quantities. It is reported to have cored 7 or 8 feet of sand at the bottom of the hole when the blowout occurred and the cores were lost. Pipe is stuck and it may be possible to produce through the drill stem.

In the Slick-Wilcox field, Transwestern Oil Company's R. L. Wofford 1, has been abandoned at 7591 feet. A drill-stem test at 7570-91 feet recovered water cushion with no show of oil or gas.

Willacy County: Standard Oil Company of Kansas has made location for Champion et al Unit 1 in the Willamar field, which is reported going to 13,000 feet. Pan American Production Company's Crane 1, is drilling below 12,000 feet in this field, the first really deep test in the area.

Brooks County: Humble Oil & Refining Company's Sullivan 1, wildcat southeast of Falfurrias, is reported coring below 8500 feet, with no new shows reported.

Kleberg County: Sohio Petroleum Company has made location for a test in the new Ricardo field, recently opened by Tide Water Associated Oil Company. The location is the J. Garcia A-1, in Lot 2, Block 42, Kleberg Town & Improvement subdivision. Contract depth is 8500 feet.

Upper Texas Coast

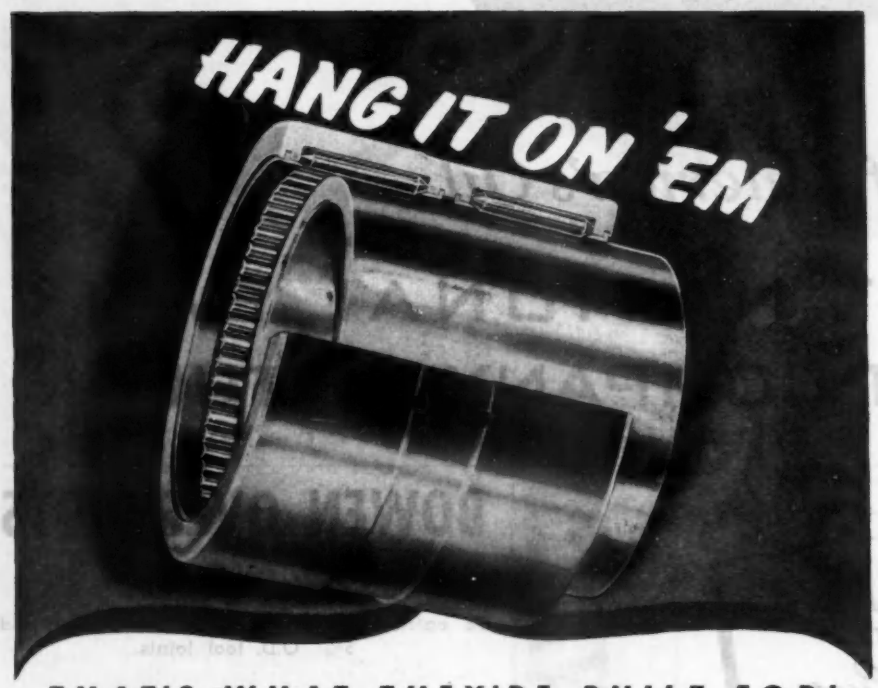
New Field Discoveries Complete in Two Counties

Field discoveries completed in Tyler and San Jacinto counties; discovery indicated in Matagorda County; Liberty County field extended; Brazos County well rapidly approaching a new record depth.

Tyler County: The Atlantic Refining Company's Houston Oil Company-American Republics Corporation, South Hyatt area, has been completed after having shut off the water which showed up in several previous tests. On a 5-hour test with casing perforated at 8379½-82 feet, it flowed at the rate of 10.82 barrels of 46.5-gravity oil hourly through a 3/16-inch choke with tubing pressure 2400 pounds and casing sealed. No water showed on the test and gas oil ratio was 4770 to 1. Depth is 9015 feet and the 5½-inch production string has been landed at 8675 feet.

Hardin County: Houston Oil Company and American Republic Corporation have set a long string of casing in their Hardin Fee 2, just 1¼ miles south of the discovery well in the Village Mills field in northern part of the county, and will make tests in deeper sands. Depth if 9559 feet and casing was set to 9472 feet. The discovery well had been completed to open a new gas field late in October of 1944, from Cockfield sand at 5770-5812 feet.

Operators have located Maxwell 1, a



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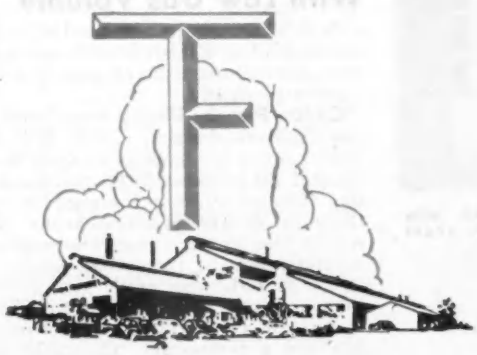

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wildcat south of Silsbee. In the V. F. Singleton Survey, it is projected to 8000 feet, using a company rig.

San Jacinto County: Navarro Oil Company, after a couple of weeks of testing, has completed Foster Lumber Company 1 to open a new field south of Cold Springs, and has moved the rig to location for the Number 2 well, a southwest offset. The discovery tested 83.04 barrels of pipe line 36.5-gravity oil daily through a 5/32-inch choke with tubing pressure 1850 pounds and casing pressure 2050 pounds with 880,000 cubic feet of gas per day. Perforations had been made at 7906-10 feet for final completion.

Brazos County: Phillips Petroleum Company's Fannie Schoeps 3, in the Millican area, which may set a world's depth record, was drilling below 15,800 feet, near the close of the week and was making around 50 to 60 feet daily. It is now within 500 feet of the record set by Standard Oil Company's well in California, late in 1944.

Matagorda County: A new gas-distillate field is assured for Matagorda County a mile east of Bay City by Skelly Oil Company, Stanolind Oil & Gas Company and Tide Water Associated's Hardy & Horn 1, which perforated casing at 10,316-322 feet, with depth 10,882 feet, and made a drill-stem test with ⅜-inch bottom and ⅛-inch top chokes. Fluid reached surface in 8 minutes at 2500 pounds pressure and after cleaning the 55-thribble water cushion, flowed 12 hours through a ¼-inch top choke, recovering 21.31 barrels of fluid which was 8 to 10 percent fresh water, and gas at the rate of 5,202,560 cubic feet daily with flowing pressure 3500 pounds and ratio of 121,000-1 on gross fluid. Gravity of the water-white distillate was 41.5 degrees corrected. A 3½-hour test through a ⅜-inch top choke showed 8.25 barrels of fluid, 12.4 percent fresh water, and gas at the rate of 6,522,360 cubic feet daily, with ratio of net oil 129,800 to 1. It squeezed and was going in to reperforate for a test of another sand.

Liberty County: General Crude Oil Company's Sun Oil C-1, between the Kirby and South Esperson fields, has been completed, making 5 barrels of oil hourly through a ⅛-inch choke from perforations at 5940-45 feet, 5955-70 feet, and 5975-85 feet. The 5½-inch casing was cemented at total depth of 6040 feet, and the well, originally carried as a wildcat, will probably be designated as an extension to the South Esperson field.

South Louisiana

Flatwoods Location Among Several New Tests Staked

Brisk activity continues with new wildcat and field locations being made to assure plenty of development.

Rapides Parish: Louisiana Land & Exploration Company has made location for the second test in the new Flatwoods area, where its J. A. Bentley A-2 has indicated opening of a new Wilcox sand oil field for the central portion of the state. The new test, Bentley A-3, will be in 36-5n-5w, and an east offset to the discovery, which has not yet reported final completion following a squeeze job and retesting of the upper portion of the sand. On original test it had perforated at 6495-6505 feet, flowing 200 barrels of fluid of which 25 percent was salt water, the rest being 38-gravity oil. Perforations for the current test are at 6488-94½ feet, which should be above water level.

St. Landry Parish: Sun Oil Company's Guilbeau-Levergne, in 37-7s-4e, Shuteston area, is testing through perforations at 9510-14 feet, and has been shut in while building tanks. It showed 17 percent salt water on the first test, with 1200 pounds pressure on tubing. Depth was 10,600 feet with casing on bottom.

St. Martin Parish: Yegua Corporation, of Houston, has made a location for its Guchereau 1, a 10,500-foot wildcat for St. Martin Parish, in 71-9s-5e, with rig now being set up on the location by Barnsdall Drilling Company, contractor.

The same operators are drilling their Oliver & Burdin, a wildcat in 48-7s-6e, now below 1000 feet after a short fishing job.

Assumption Parish: Tide Water Associated's Lussier 1, on the Napoleonville Dome, in 58-12s-14e, is making a drill-stem test with casing perforated at 9800-06 feet, and is reported making dry gas with 1000 pounds working pressure, using ¼-inch and ⅛-inch chokes. It was first perforated at 9804-06 feet, testing dry, then reperforated at 9800-02 feet for another test.

Beauregard Parish: Amerada Petroleum Corporation was making location for Lutcher-Moore Lumber Company 1 as a new wildcat northeast of the Fields, or Mystic area, in 23-6s-2w, and is scheduled to start right away.

In the Mystic area, Sohio Corporation has taken over operation of the wells on Yegua Corporation's Lutcher-Moore "B" lease, with 2 wells now drilling, and a producer, Lutcher-Moore B-1 which recently opened a new sand for the field.

Lafayette Parish: Magnolia Petroleum Company has scheduled a deep wildcat test in the area northwest of Lafayette. It is to be carried as the company's Gustav Bower and will be situated in the southwest quarter of 69-9s-4e.

North Louisiana

Caddo Discovery Testing With Low Gas Volume

North Louisiana's first 1945 discovery in Caddo Parish is still testing with low gas volume; development program continues steady.

Caddo Parish: Phillip Petroleum Company's Moneyham 1, C NE NW 5-18n-16w, Longwood area, is flowing between 75 and 80 barrels of 40-gravity oil per day through 9/16-inch choke on tubing, through 20 perforations from 5855-60 feet in the Travis Peak. The well shows no indication of formation water. Total depth is 6512 feet with string of 5½-inch casing cemented at 6077. The Louisiana Department of Conservation has set a temporary allowable of 125 barrels a day to allow testing to continue. Company acreage extends over into Harrison County, East Texas, and was assembled in 1930. Since then several shallow gas wells have been completed.

Natchitoches Paris: W. C. Feazel and DeWitte C. Loe are reported drilling

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below 2500 feet in McIntyre 1, 12-13n-8w, direct diagonal offset to The California Company's Morrison 1, wildcat recently abandoned at 5324 feet. The McIntyre is said to have drilled a fault which has used up several rock bits.

The California Company is expected to start another test in the Ashland area.

Caldwell Parish: Shell Oil Company is expected to complete Louisian Central Lumber Company 1, SW SW NW 31-15n-3e, deepest test in this sector. The well is drilling at 11,613 feet and probably will run casing within the next week. Production of gas has already been indicated, as the well blew out last September while fishing at 10,141 feet.

Webster Parish: Hunt Oil Company has cemented 5½-inch casing at 11,313 feet in Mrs. O. G. Roberts 1, 11-23n-10w, 6 miles east of Spring Hill townsite. The well is said to have its best chance of commercial production in the Cotton Valley horizon.

Richland Parish: The Delhi field has its fourth producer. C. H. Murphy and Sun Oil Company's Ella M. Barrier 1, 22-17n-9e, 2 locations east of the discovery well, is flowing 210 barrels of 40-gravity oil through 3/16-inch choke on tubing from 20 perforations opposite 3259-62 feet. A squeeze job was run on first perforations from 3256-61 feet because of a too-high gas-oil ratio. Operators are taking a drill-stem test at J. E. Holt 2, C NE SE 21-17n-9e, between the discovery and Barrier 1.

G. C. Shoonmaker, A. W. Phillips et al have staked a new wildcat, Gold Mine 1, C SE SW SW 10-14n-6e, in the extreme southern portion of the parish. It will go to 4500 feet if necessary.

Boosier Parish: J. R. Hayden, Trustee's Ellerbee 1, 3-20n-13w, 3 miles northwest of the Benton field Cotton-Valley gas-distillate discovery, is drilling below 7880 feet in the Cotton Valley horizon.

Barnsdall Oil Company and Sohio Oil Company are making unusually fast time in Welori Lumber Company 1, C SE NW 20-20n-12w, southeast of the Benton discovery, and are drilling below 3360 feet in shale. Electrical survey indicated top of Nacatoch at 1244 feet.

Unitization Planned

A bill is to be introduced in the Oklahoma House of Representatives authorizing unitization of oil pools for the purpose of effecting secondary recovery. Under the provisions of the measure if 50 percent of the leases in any individual pool agree it would be possible to unitize the pool or a part of the pool. The order would be issued by the Oklahoma Corporation Commission with the proviso that if it was contested by one fourth of the participants, the order would become void.

Arkansas

James Limestone Pay May Revive Activity in State

Drilling at low ebb; Stephens field's new James limestone pay may revive activity.

Columbia County: Mayfield Drilling Company located W.A.G. Woodward 1, C SE NE 6-17s-19w, a proposed Smackover wildcat north of the Magnolia field and northwest of Village Townsite.

Pumping unit is being erected at R. H. Crow's J. B. Morgan 1, NW NE NW 18-15s-19w, which in working over discovered production from the James lime in the Glenrose section. The well is on the southeast flank of the field on the Ouachita side and is about ¾-mile off the crest of the structure. The James is known to be low on structure, and was perforated with 50 shots from 3086-3100 feet. It was treated with 1000 gallons of acid. During swabbing test, it produced 1000 barrels of oil and 10 percent basic sediment and water.

Miller County: The Atlantic Refining Company abandoned Montana Realty Company 1, C SW SE 17-17s-28w, at total depth of 10,006 feet in igneous material, topped at 9950 feet. There was no indications of oil or gas. This failure is the company's first in Arkansas.

Union County: C. H. Murphy, Jr.'s Fee 1, NE NE 4-19s-15w, proposed Smackover wildcat in the old El Dorado field, is reported to have logged a showing of oil in the Cotton Valley, where the well is drilling below 5720 feet. Geological information is being withheld until completion.

The Petroleum Administration for War has authorized standard 640-acre spacing for the Salem Church field, after evidence indicated the field would cover not more than 1400 productive acres, leaving room for only 1 more location. The field was discovered in July by The Carter Oil Company's G. F. Wilson 1, C SW NW 33-16s-18w.

Calhoun County: J. T. O'Neil is reported planning a wildcat in 33-14s-16w, 7 miles southeast of Camden. O'Neil's Helen B. Gaughan 1, C NE NE 15-14s-16w, was abandoned at 4345 feet.

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Southeastern

Marion County, Mississippi, May Receive New Field

Further tests in Humble's Marion County, Mississippi, discovery still indicate opening of a new field; Mallalieu field, Lincoln County, and Cranfield field, in Adams County, extended; first test in Yazoo County wildcat shows water and oil.

Marion County: Humble Oil & Refining Company's A. Evans 1, latest discovery in Mississippi, is still testing and may not make final completion in the zone which is now perforated. With casing perforated at 9127-29 feet, it flowed 108 barrels of fluid, of which 88 percent was 43-gravity oil and 12 percent basic sediment and water, along with gas volume of 1,420,000 cubic feet daily, through a 3/16-inch choke. On a later 12-hour test, it flowed 52.2 barrels of fluid, only 2 percent basic sediment and water with 1,650,000 cubic feet of gas. Gravity increased to 45.5 degrees. Tubing pressure was 2650 pounds. Production is from Tuscaloosa horizon but is above the Massive zone which carried water in this well.

Lincoln County: The California Company's J. S. Nordan 2 has been completed as the second producer in the Mallalieu field, making 190 barrels of oil daily through a 5/32-inch choke. Production is from perforations at 10,472-480 feet, 10,487-516 feet, and 10,534-552 feet, all in the Massive Tuscaloosa zone. It is a north offset to the discovery well. The company's M. R. Douglas 1, east offset to the discovery, has drilled to 10,764 feet and set 7-inch casing to 10,750 feet after running electric logging survey. Top of the first Tuscaloosa sand has been reported at 9570 feet.

Adams County: The California Company's Alice M. Ratcliffe 2, the most southerly producer in the Cranfield field, has been brought in from Massive sand with casing perforated at 10,284-319 feet, and made 384 barrels of oil during its 24-hour potential test through a 9/64-inch choke.

Lamar County: The Superior Oil Company's R. Batson et al 1, southeast of the Baxterville field and 1½ miles from the discovery well, was preparing to perforate for tests in the 7800-foot sand after setting casing to 8772 feet. It is reported as having shows in 2 sands and may be dually completed.

Gulf Refining Company's J. M. Andrews 1, north offset to the Baxterville field discovery, is coring below 7834 feet, looking for Massive sand, which is not expected for several hundred feet. It recovered 30 feet of 27-gravity oil during a drill-stem test at 7802-24 feet in the upper Tuscaloosa.

Yazoo County: Southern Natural Gas Company's Gammil Investment Company 1, wildcat 9 miles west of the Tinsley field, has perforated casing at 6605-17 feet for a drill stem test which began flowing mud in 1½ hours, but cleaned up to flow salt water with a slight show of oil. It may have a bad cement job and will be squeezed for another test at the same level.

Alabama

Active leasing and prospecting continued in Alabama despite another wildcat failure. John Green, Jr.'s Lucile G. Dawsey 1, C SW SE 20-10n-4w, Choctaw County, was abandoned at 3420 feet in chalk, toppe dat 2658 feet. Glen Rose had an apparent failure in Z. A. Boshell 1, C NW NE 18-12s-8w, Winston County, which reacidized with 3000 gallons and turned to salt water after testing 2½ million cubic feet of gas in 2½ hours. Boshell 1 is now waiting on orders. Rose has located Ulysses 1, C N½ NW SE 6-13s-2e, Walker County.

Green County: J. L. Cates has material on ground for J. A. Steele, Trustee, 1, NW SW 6-21n-2e.

Washington County: J. T. Parks' Hobson 1, C SW NE 9-8n-2w, having topped the Selma at 1553 feet, is drilling below 3130 feet.

Monroe County: Active leasing is going on in this county of late. Arkansas Fuel Oil Company has taken approximately 15,000 acres in Townships 8n-7e and 9n-7e in the northern sector and has filled in with open tracts until it has the area solidly leased. It is understood the company has contracted to begin a wildcat by April 1 in Sec. 4 or 5 of Township 8n-7e, southeast of Franklin. Humble Oil & Refining Company has about 300,000 acres under lease. The Atlantic Refining Company has 600 acres; and Magnolia Petroleum Company is another large leaseholder.

Florida

Humble Oil & Refining Company made a drill-stem test in State 1, C NE NW 30-55s-36e, Dade County deepest wildcat in Florida and recovered 5500 feet of fresh water and 30 feet of drilling mud in 35 minutes. Test was made at 11,528-42 feet. So far there have been no indications of production. Drilling continued below 11,666 feet.

Humble's Gulf Coast Realties 4, 20-48s-30e, Collier County, was drilling hard lime and dolomite with streaks of shale at 8395 feet. Humble's G. C. Carleton Estate 1, C SW NE 34-38s-29e, Highlands County, is reaming, total depth 2710 feet in lime.

Hunt Oil Company's Foshee-Miller (was Miller Mill Company) 2, C SE SE 8-5n-28w, in Santa Rosa County, is making fast time and is below 5312 feet. No showings have been reported.

The Pure Oil Company is coring at 6042 feet in C. C. Hopkins 2, C NW NW 21-6s-9e, Gulf County.

Deep Wells Planned

Seismograph work in Oklahoma continues to center along the Hunton arch trend in the northwestern part of the state where operators are seeking favorable locations for deep drilling in the Anadarko Basin area during the year. Some seismograph work is being done in the southeastern part of the state as well as in the western and southern areas.

Rocky Mountain Area

More Than 500,000 Acres Leased Since January 1

More than 500,000 acres leased since beginning of year; Rangely field may be extended; interest centers on first Weber sand test in Wilson Creek field.

More than 500,000 acres of land have been leased in an area comprised of southwestern Wyoming, northeastern Utah and southeastern Idaho since the beginning of the year.

This region has been given a new impetus by favorable tests being drilled in the Rangely and Powder Wash fields in northeastern Colorado. Most of the lands being leased are of government

and railroad ownership, with smaller amounts of patented and state-owned lands. These blocks in several instances amount to 50,000 to 150,000 acres each, usually with the oil company controlling the entire acreage.

Colorado

Moffat County: Husky Refining Company's Hagood 1, should soon extend the Rangely field a mile west. The Weber sand was found at 5955 feet and 7-inch casing was cemented at 5964 feet. Drilling will continue through the thick saturated Weber with production received from open bottom hole. Other wells nearing the pay are Husky's Rector 1 at 4550 feet and The California Company's Gray 8. Rangely field is nearly 100 miles from a railroad.

Rio Blanco County: Much interest is centered on the first test being drilled to the Weber sand in the Wilson Creek field. The Texas Company-Cailfornia joint test, Unit 20, entered the Red Beds at 7238 feet, and was drilling at 8223 feet. Surface elevation at the well is 8200 feet and at this time of the year work is being carried on in snow 2 feet deep in this highest of all oil fields.

Wyoming

Natrona County: Texas' Clark 1 at Oil Mountain found the Madison and Deadwood dry and the Big Horn missing at a depth of 3416 feet. The hole will be plugged back to the Tensleep, where saturation was encountered from 2630 feet to 2795 feet which on a previous drill stem test showed poorly due to the low gravity of the oil.

Park County: Continental Oil Company's Goodstein 1 at South Elk Basin was drilling in Red Beds at 6442 feet in a wildcat headed for the Tensleep that produces in the Elk Basin field, 4 miles north. The well has discovered an estimated total of 15 to 20 million cubic feet of gas encountered in the second Frontier at 4353 feet, Dakota sand at 5394 feet and the Lakota at 5587 feet.

Montana

Carbon County: The Carter Oil Company's Bowlin 1, deep test wildcat at Fox-Luther, 5 miles north of Red Lodge, with elevation of 4928 feet, is believed to be still drilling in the Thermopolis shale at 8420 feet. The first Wall Creek was topped at 4525 feet, second Wall Creek 4845 feet, Colorado shale at 6010 feet, Frontier at 7540 feet, and Mowry shale at 7700 feet.

Toole County: Texas is rigging up on 2 locations in the newly discovered Devon area where it has completed Ekholt 1 on pump for 15 barrels of oil per day from 1390 feet. The new locations are ¼-mile east and west of the discovery well.

Illinois Basin

Discovery Registered Near Willow Hill Pool, Illinois

Important discovery registered near Willow Hill pool, Illinois; new pool likely in St. Clair County: Saline County offset prepares to test Aux Vases; Indiana test showing for a gas producer.

The Pure Oil Company has one of the most important discoveries in Illinois in several weeks at Shott Consolidated 1, NW SE SE 34-7n-10e, approximately ¼-mile from the Williw Hill pool, which was discovered more than a year ago and during that time showed

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Prepared under the Direction of the Committee on Tectonics, Division of Geology and Geography, National Research Council.
Chester R. Longwell, Chairman, Philip B. King, Vice-Chairman.
Charles H. Behre, Walter H. Bucher, Eugene Callaghan, D. F. Hewett, G. Marshall Kay, Eleanora B. Knopf, A. I. Levorsen, T. S. Lovering, George R. Mansfield, Watson H. Monroe, J. T. Pardee, Ralph D. Reed, George W. Stose, W. T. Thom, Jr., A. C. Waters, Eldred D. Wilson, A. O. Woodford.

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The scale is 1:2,500,000, or 1 inch equals 40 miles. Printed in 7 colors, on 2 sheets, each about 40 x 50 inches. Full map size is about 80 x 50 inches.

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The Shott 1, tested through perforations in McClosky lime at 2665-75 feet, 2680-85 feet and 2690-2705 feet, yielded 640 barrels of oil flowing in 24 hours without acid.

St. Clair County: Homer Luttrell may give the county a new pool at Hagemann 1, NW NW NE 10-2n-6w, 2 miles south of the St. Jacob pool. Pay was discovered in the Trenton lime, chief producing zone in the area, at 2370 feet and the well was drilled to a depth of 2399 feet. Operator was running casing for a test of the pay which showed oil during a drill-stem test. Operators believe acidization will benefit the well.

Effingham County: Leland Waggoner's Wood 1, SE SW SE 28-6n-7e, which extended McClosky production 1¾ miles north of other McClosky production in the Bible Grove pool, swabbed and flowed 345 barrels of oil in 16 hours natural from pay at 2865-70 feet. The well is adjacent to Cypress sand production.

White County: H. H. Weinert's Kisner 1, SW NE SE 31-5s-9e, 2 miles north of the Stokes pool, was testing Rosiclare after swabbing 5 barrels per hour from pay at 3140-45 feet and 3120-35 feet, or the lower and upper formations.

Saline County: Phillips Petroleum Company's Bunnell 1, NE NE NW 20-7s-5e, southwest offset to Sinclair Wyoming Oil Company's discovery near the county line in Hamilton County, has run casing to test Aux Vases sand at 3139-53 feet. During a drill-stem test, the well made gas in 30 minutes, 730 feet of oil and 310 feet of oil-cut mud in an hour.

Gallatin County: The Carter Oil Company is completing Williams 3, NE SW SE 27-7s-10e, in upper New Haven township for one of the best wells in the county in several weeks. Swabbing from Tar Springs sand at 2113-35 feet, the well yielded 240 barrels of oil and no water in 24 hours.

Wayne County: Pure's Ruble 1, SW SE SE 1-1n-7e, has proven one of the best wells of the week by producing 1725 barrels of oil, flowing natural, from McClosky lime at 3008-18 feet.

Edwards County: Aetna Oil and other's Greathouse 1, SW NE NW 23-1n-10e, about 3 miles southwest of Salem in wildcat territory, is drilling plug for test of O'Hara lime at 3247-54 feet.

Indiana

Rhodes et al's Douthitt 1, 30-7s-7w, in Spencer County 3 miles south of the Hatfield oil pool, is showing for a gas producer in the Tar Springs sand at 1160-70 feet. Production is estimated at 10,000,000 cubic feet daily. Operators were setting pipe for final tests.

New Helium Plants

Three new helium gas plants were built and put into production last year according to a report by the United States Bureau of Mines. This brings to five the number of plants now operating in this country.

In addition to meeting all requirements of the armed forces these plants for the first time last year provided considerable quantities of helium gas for commercial and scientific uses and, in spite of higher wartime costs, the production cost of helium was reduced at most of the plants.

California

Six Wildcats Are Staked In Kern, Los Angeles

Three Kern County and 3 Los Angeles County wildcats staked; Contra Costa County gas test abandoned.

Contra Costa County: Standard Oil Company of California's Davis 1, gas test in 36-18n-2w, recovered water on tests of gas sands logged and was abandoned at 3560 feet.

Kern County: Richfield Oil Corporation staked locations for 3 wildcat tests, Lerdo 1, SE SE 1-28-26 in the Premier area; Lawson-Bennett 1, NW NW 26-30-29 in the Eidson area; and A26-15 NW NW 26-30-29, near Mountain View.

Independent Exporation Company's shallow wildcat, Heisen 1, NW SE 36-27-28, near Round Mountain, topped the barren Vedder sand at 1030 feet and was abandoned at 1045 feet.

Standard's Cahn 1, 4-27-21, deep test of the Lost Hills field, is running 9⅝-inch casing to cement on bottom at 7867 feet in shale.

Los Angeles County: Delaney Petroleum Company's Karales 1, in 19-6-10, is pumping 140 barrels of 17-gravity oil, cutting 50 percent. Located north of Newport Beach production, it is possible a new fault block has been uncovered. Production is from the interval 1605-2050 feet.

Shell Oil Company's deep test of the Signal Hill Alamitos 48A is below 10,920 feet in hard shale, the deepest well ever drilled in the field.

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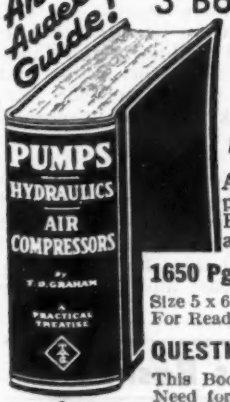

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General Petroleum Corporation is grading roads for Librown 1, semi-wildcat in the Buena Park area, 1½ miles northwest of its Heath 1 producer in 21-3s-11w. Heath 2 stuck drill pipe near bottom while reaming out rat hole. Depth is 11,850 feet. Heath 1 is currently producing 70 barrels per day, 28-gravity, 3 percent cut.

Santa Barbara County: Shell's Dreyfus 1, 8-4-29 shallow test of the Naples area, failed to find pay sand and was abandoned at 2142 feet.

Ventura County: Los Nietos Company's LBH 1, 22-3-21, deep test of the Sounth Mountain area, is pumping 167 barrels daily, cutting 20 percent. Production is from the Sespe sand in the interval 4497-5452 feet.

California Operators Shift Attention to Other States

Decrease in recent months in the number of important oil discoveries in California has resulted in a pronounced shift of attention of several large operating organization to the producing possibilities in near-by states.

This is particularly true of Oregon, where The Texas Company, the reported spender there of more than $140,000 in geological and geophysical surveys, has leased approximately 96,000 acres of logged off land in a tax title sale by Columbia County. The ground involved is approximately 30 miles northwest of Portland.

Texas plans to start its first well on the Oregon acreage in the spring, which will meet the provisions of the lease and go to at least 5000 feet.

If commercial gas or oil is found in the first test, the company agrees to keep one string of tools in continuous operation until the equivalent of one oil well for each 40 acres has been drilled, or one gas well for each 640 acres, except that no more gas be produced than called for by the market.

Michigan

Test in Osceola County Proves Disappointing

Sun Oil Company's State B1, S½ NW NE 10-18n-9w, Cedar Township, Osceola County, proved a disappointment after logging a good show of gas and oil at 3944-45 feet. Dundee dolomite at 3944 feet proves a false top and when drilling was resumed samples showed continuation of the shale section. The show at 3945 feet was not believed commercial. The test is 4 miles southeast of the Rose Lake Traverse lime pool.

Tuscola County: Shell Oil Company logged a show of oil in Dundee lime at 2600-50 feet on the Hutchinson 1, NE NE NW 21-14n-10e, wildcat, and was drilling. Dundee was topped at 2582 feet.

Clinton County: Fire and near complete destruction of the drilling machine delayed deepening plans on Smith Petroleum Company's Kellam 1, SW NE NE 33-8n-4w, wildcat in Lebanon Township. The outpost had been under tests at 2575-2610 feet for Traverse lime production for 4 weeks, pumping initially 60 barrels but declining to 3 barrels with a show of water. It made a flow and fired as deepening work started.

WESTERN CANADA

More Wildcats Staked In Southern Alberta

Imperial Oil Ltd. has staked 2 more Southern Alberta Plains wildcats to be drilled with the light rotary rigs from its two current wildcats now close to completion.

Imperial-Tempest No. 2 has been staked in sd 3 24-9-19w4th, 9 miles west and 1½ miles north of the most westerly Taber Oilfield wells, and 2 miles east and a mile south of the Imperial-Tempest 1. The latter is now drilling a short distance in the Devonian dolomite at 4985 feet, with little of importance showing in the Devonian but with a promising oil show in the overlying Madison Limestone, to be tested after completion of drilling.

Imperial-Stirling 1 has been staked in lsd 4 15-7-19w4th, 13 miles south and 2 miles west of the Tempest No. 2, and 8½ miles northeast of the Imperial-Clancey-Raymond No. 1, now deepening in the Devonian Dolomite below 5551 feet. This well has encountered oil saturation in the Devonian, but tight formation makes productive outlook not too favorable.

Home Oil Company, No. 1 independent Canadian oil producer (1,400,000 barrels in 1944), is embarking on a minimum $500,000 program in an effort to establish a major northwest extension of the Turner Valley oilfield.

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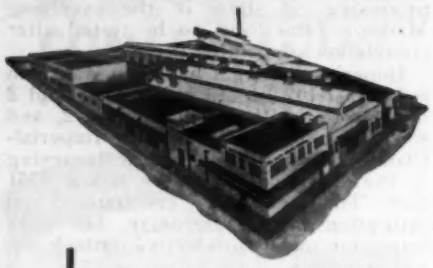

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CALIFORNIA WILDCATS

Contra Costa County—Failure: Standard's Davis 1, se nw 36-18n-2w, abnd 3560 ft.

Kern County—Failure: Independent Explor. Co.'s Heisen 1, nw se 36-27-28, Vedder 1030 ft, abnd 1045 ft.

Santa Barbara County — Failure: Shell's Dreyfus 1, 8-4-29, Vaqueros 580 ft, abnd 2142 ft.

COLORADO WILDCAT

Larimer County — Failure: Iris Oil Co.'s Monroe 1, ne nw se 13-11n-69w, Round Buttes area, elev 5932 ft, Muddy sd 1885 ft, Dakota 2060 ft, abnd 2070 ft.

ILLINOIS WILDCATS

Alexander County—Failure: E. L. Whitebread et al's Minton 3, sw sw se 4-15s-3w, abnd 1521 ft.

Richland County—Failure: Pure's Ira Hasler 1-A ne se ne 1-3n-8e, abnd 3180 ft.

Wayne County—Discovery: Gulf's Amderson 1, nw nw ne 26-1s-5e, pump 11 bbls oil, Aux Vases 2998-3010 ft, td 3158 ft.

INDIANA WILDCAT

Perry County—Failure: Sun's V. Gibson 1, se se se 17-4s-1w, abnd 3527 ft.

KANSAS WILDCATS

Barton County—Failure: Carter's Bates 1, ne sw ne 23-18s-13w, Lans 3070 ft, Arb 3322 ft, abnd 3355 ft.

Cowley County—Failure: Continental's Spear 1, nw se nw 31-33s-6e, Miss 3036 ft, Arb 3532 ft, abnd 3543 ft.

Graham County—Failure: Iron Drlg.'s Everest 1, sec ne 32-8s-21w, Arb 3746 ft, abnd 3755 ft.

KENTUCKY WILDCATS

Henderson County — Failures: Sun's Pinkston 1-A 19-O-22, abnd 2699 ft.

Wood's McGeehee 1, 23-Q-22, abnd 2675 ft.

Ohio County—Failure: Ashland O&R's Barnard 1, 13-L-32, abnd 1500 ft.

NORTH LOUISIANA WILDCATS

De Soto Parish—Gas Discovery: E. P. Jarvis' Franklin et al 1, 6-11n-12w, elev 336 ft, perf 1760-65 ft, tested 35,000 gas, td 2827 ft.

Madison Parish—Failure: Sohio's H. Harper 1, 2-16n-13e, elev 91 ft, abnd 6952 ft.

Natchitoches Parish — Failure: California Co.'s Annie Morrison 1, elev 188 ft, shows in Eagleford 3295-3333 ft, and Rodessa 5116-33 ft, temp abnd due to sw 5324 ft.

SOUTH LOUISIANA WILDCAT

Calcasieu Parish—Failure: Magnolia's O. B. Crozier 1, 660 s&w of nec 13-10s-10w, abnd 9583 ft.

SOUTH LOUISIANA OUTPOST

St. John Parish—Laplace Extension: Atlantic's Lutcher Moore Lbr. Co. 2-A, 660 n&e of swc 1-11s-7e, perf 10,340-54 ft, flow 206 bbls 51.8-gr oil, 15% bs&w, ⅛-in, gor 995/1, tp 1800 lbs, td 11,102 ft, pb 10,356 ft.

MICHIGAN WILDCATS

Allegan County—Failure: Fox Hole Oil Co.'s Harmsen 1, nw ne se 29-4n-14w, Traverse 1649 ft, abnd 1698 ft.

Roscommon County—Failure: E. V. Hilliard's Wraco 1, nw ne nw 11-21n-4w, abnd 4035 ft.

Clinton County—Failure: McClanahan Oil Co.'s Aldrich 1, se se sw 3-7n-1w, Dundee 2780 ft, abnd 2815 ft.

Ionia County—Failure: Michigan Oil Co.'s Dickinson 1, ne se se 22-8n-6w, Dundee 2978 ft, abnd 3026 ft.

Isabella County—Failure: Leslie T. Barber's Parker 1, n½ se ne 26-13n-6w, abnd 1323 ft.

Ottawa County—Failure: C. A. Perry's Beck 1, sw sw se 24-6n-15w, abnd 1675 ft.

Tuscola County—Failure: E. E. Brehm's Charlton 1, ne ne se 34-11n-8e, abnd 3370 ft.

Van Buren County — Failure: Gordon Oil Co.'s Luth 1, nw nw sw 4-4s-14w, abnd 1021 ft.

MISSISSIPPI WILDCATS

Lauderdale County—Failure: Wanete Oil Co.-Richard B. Lack's J. F. Craig 1, c sw ne 32-7n-14e, elev 480 ft, Midway 1405 ft, Clayton 1915 ft, Selma 1925 ft, Eutaw 2820 ft, Tuscaloosa 3185 ft, Massive 4163 ft, L Cret 4683 ft, abnd 4955 ft, no shows.

Pearl River County—Failures: Hassie Hunt, Tr.'s R. Batson 1, c ne sw 10-1s-14w, elev 220 ft, Midway 5260 ft, Chalk 6072 ft, Eutaw 7114 ft, Tuscaloosa 7150 ft, Marine Tuscaloosa 7750 ft, Massive 8405 ft, abnd 9165 ft.

Sinclair Wyoming's R. Batson et al 1, sw 20-1s-15w, elev 282 ft, Wilcox 3280 ft, Midway 5825 ft, Clayton 6648 ft, Tuscaloosa 8044 ft, Massive 9128 ft, L Cret 9314 ft, abnd 9588 ft.

MISSOURI WILDCAT

Cass County—Failure: Wilson et al's Kincaid 1, sw se se 8-45n-33w, abnd 770 ft.

NEW MEXICO WILDCATS

Chaves County — Failure: Steinberger & Saunders' Kimes 1, c ne ne 11-15s-29e, elev 3885 ft, salt 380-1135 ft, Red sand (Queen) 2130 ft, lime 2565 ft, abnd 3616 ft.

Lea County — Failures: Humble's Keinath-Federal 1, 1980 ft snl 1885 ft ewl 8-21s-38e, elev 3582 ft, anhydrite 1730 ft, base salt 3655 ft, San Andres 4315 ft, Glorietta 5635 ft, Tubb (Clear Fork) 6660 ft, Simpson 8990 ft, Ellenburger 9680 ft, granite wash 9895 ft, granite 9951 ft, abnd 9954 ft.

Vickers Pet. Co.'s State 1, c lot 8, or 1980 ft snl 660 ft wel 2-16s-34e, elev 4087 ft, anhydrite 1753 ft, salt 1945-2755 ft, Yates 2930 ft, Red sand (Queen) 3772 ft, San Andres 4475 ft, abnd 5247 ft.

Lea County—Oil Discovery: E. J. McCurdy-McElroy Ranch Co.'s (was Ward-Barefield-Cox) State-Young 1, (OWDD) c ne nw 20-18s-32e, otd 1350 ft, elev 3747 ft, anhydrite 1025 ft, salt 1100-2150 ft, Red sand (Queen) 3737 ft, flow 376 bbls natural via 2-in, sand 3765-78 ft, td 3783 ft.

OKLAHOMA WILDCATS

Okfuskee County — Failure: Tom Leach's Allen 1, se nw sw 16-13n-9e, abnd 4000 ft.

Payne County—Failure: V. L. Cromwell's Price 1, se sw nw 9-20n-4e, Wx 4204 ft, abnd 4270 ft.

Stephens County — Failure: Waggo Oil's Johns 1, ne ne ne 11-2s-9w, Penn 3200 ft, abnd 4476 ft.

Washita County—Failure: Sinclair Prairie's Bishop 1, ne ne nw 31-8n-19w, abnd 7508 ft.

WEST TEXAS WILDCATS

Andrews County—Failure: Stanolind's Midland Farms 1-N, c ne sw T&P Ry. 15, blk 40, T-1-N, elev 2990 ft, anhydrite 2000 ft, Yates 3140 ft, Grayburg lime 4630 ft, abnd 5000 ft.

Crockett County—Failure: T. P. Coal & Oil Co.'s Harris 1-F, 467 ft nsl and 330 ft ewl I&GN Ry. 88, blk 1, jkd and abnd 1699 ft.

Gaines County—Failure: Bay Pet. Corp's Cox-Humble 1, (OWDD) 610 ft wel 660 ft nsl CCSD&RGNG sec 468, blk G, elev 3482 ft, otd 5223 ft, Yates 3070 ft, San Andres 4600 ft, Glorietta 6120 ft, abnd 7760 ft.

Hockley County—Oil Discovery: Texas Co.'s Montgomery 1, 580 ft out nec labor 19, Lge 70, Val Verde CSL, 7 mi n Slaughter fld, nearest prod, elev 3600 ft, San Andres 3800 ft, pump 95 bbls oil, 9 bbls bs&w, 15,000 gals acid San Andres broken pay 4750-4927 ft.

Lynn County—Failure: Texas Co.'s Edwards 1, (OWDD) c se se sec 158, Georgetown Ry. Co. sur, otd 6630 ft, elev 3230 ft, anhydrite 2070 ft, Yates 2790 ft, San Andres 4040 ft, abnd 7238 ft.

WEST CENTRAL TEXAS WILDCATS

Coleman County — Failures: Anzac Oil Corp.'s Williams 1, c nw¼ GH&H Ry. 27, blk 1, elev 1979 ft, Morris sd 2785 ft, Capps 2826 ft, U Frey 2862 ft, L Frey 2921 ft, Gardner 3000 ft, Ellenburger 3679 ft, abnd 3780 ft.

Maguire Industries' Morris 2, 330 ft out nec sw nw sect 4, W. D. Roddan sur, elev 1987 ft, Morris 3342 ft, abnd 3847 ft.

Shackelford County—Failure: O. P. Leonard et al's Green 1, 220 ft out swc ne¼ T&P Ry. 64, blk 12, elev 1873 ft, abnd 1603 ft.

Taylor County — Failure: Onyx Ref. Co.-Ungren & Frazier's Bowles 1, 2420 ft snl 220 ft wel sect 25, Blind Asylum Lands, elev 1720 ft, Saddle Creek 1710 ft, abnd 2151 ft.

SOUTH CENTRAL TEXAS WILDCAT

Bastrop County—Failure: Marts & Beaven's A. P. Erhardt 1, 330 fr ely/wl 330 fr nly/nel of 329-ac tr, J. M. Bangs sur, abnd in Edwards 3006 ft.

SOUTHWEST TEXAS WILDCATS

Duval County—Oil Discovery: M. M. Miller & Sons' Geo. Herbarger 1, 2019 fr wl 1155 fr sl blk 25, 330 fr el 160-ac lse, Santo Flores Gr, Agua Poquita sur, elev 383 ft df, sand 5839 ft, perf 19 shots 5840-45½ ft, flow 72 bbls 45.2-gr, 9/64-in, td 5948 ft.

Duval County — Failure: Smith & Story's John T. Dinn 1, 990 n 330 w of swc sect 252, 120-ac lse, elev 636 df, abnd 3310 ft.

McMullen County—Failure: W. C. McBride's Mrs. Loma Pugh et al 2, 330 fr nw&nel blk 8, W. E. McBride O&G subdvn, E. L. Garrett sur 93, abnd 935 ft.

Starr County — Failure: Geo. H. Echols' Starr County Cattle Co. 1-A, 330 fr e&nl 40-ac lse, blk 16, porc 89, Jeffries subdvn, elev 330 ft, abnd 3050 ft.

Zavala County—Distillate Discovery: Texas Co.'s Nat. Bank of Commerce 1, 1980 fr wly/nwl and sly/nel E. W. Wolf sur A-1202 and of 316-ac tr, perf 4225-36 ft, open flow 10 min

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1—Emsco 4-Sheave 44″ 1¼″
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1—Oilwell 17″ Junior Make and Break

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2—5¼ - 5¾″ x 30′ Long Drill Collars
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■ FOR SALE: One 7⅝″ - 8¾″ Hughes Type "J" Core Barrel complete with three 8¾″, one 8″, one 8⅜″, one 8⅝″ new hard formation cutter heads—in perfect condition. Will cut 30′ core. $600.00. One 4½″ x 10″ Fairbanks-Morse open type power pump on steel skids — completely overhauled. $650.00. M. Rosenbloom Pipe & Supply Company, 3538 Mansfield Road, Shreveport, La., Tel. 3-7697.

■ 73—Joints 4½″ 16.60 J&L IJ good used drill pipe. Link-Belt Shale Shaker. 1 Set 3½″ to 7″ new BJ Rotary Tongs. Sam L. Tennant, Phone 135, P. O. Box 616, Blackwell, Oklahoma.

■ Lumber for sale, Oak and gum oil field lumber and timbers. Gaiennie, Box 1074, Shreveport, La.

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1—25 HP OILWELL gas engine,	$150.00
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2—STEEL DERRICKS, 64′, each,	$250.00
1—STEEL DERRICK, 64′,	$250.00
1—25 HP Oil Field Boiler,	$250.00

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■ For Sale, Gasoline rotary drilling rig $9500. Also want drilling contracts. A. R. Lewis, Corsicana, Texas.

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gas, 575 gals dist, gor 102,000/1, ¼-in, td 4933 ft.

LOWER TEXAS COAST WILDCATS

Brooks County—Failure: Standard of Texas' C. M. de Pena Lse No. 4-1, 467 fr e&nl 151-ac lse, C. M. de Pena sur 2, elev 237 ft, est depth 7100 ft.

Hidalgo County—Failure: Sinclair Prairie's Grace Callaway 1, 660 fr e&sl se¼ nw¼ sect 276 lot 6 113.49-ac lse, abnd 8026 ft.

Karnes County—Failure: Superior's Y. Y. Wilbern 1, 1348 fr nwl 330 fr swl 377.76-ac lse, C. C. Rogers sur A-371, abnd 8575 ft.

Lasalle County—Failure: Jess McNeil's Fee 1, 330 fr n&el 40-ac unit and sw¼ sect 16 Bland & Nelson subdvn, completed as fresh water well in Carrizo at 2560-2800 ft, td 3250 ft.

Nueces County—Failure: Sun's F. D. Bancroft 1, 660 fr s&el Cuadrillo Irrig. Co. sur 138 and of 80-ac lse, abnd 9220 ft.

UPPER TEXAS COAST WILDCATS

Colorado County — Failure: W. Stewart Boyle-John Mayo's R. S. Stephens 1, 660 fr n&el of s 40-ac of 80-ac lse, farmout fr Shell, 660 n&w of swc Phillips' John Dirlik lse, perf sand at 6000 ft level, swab so, abnd 7014 ft.

Liberty County—Failure: Gulf's B. E. Quinn 1-C, 1267.6 w 800 n of nec Thos. E. Foster sur sect 158, 3426.3-ac lse, James Humphries sur A-212, 16,200 s of Gulf's Kirby 22-C, deep test in Cleveland field, elev 150 ft, abnd 10,804 ft.

UPPER TEXAS COAST OUTPOST

Harris County—Satsuma W. Extension: Tide Water's Ruth G. Cobb 1, 467 fr el 1400 fr sl 640-ac lse, Washington County RR sur, perf 24 shots 6822-26 ft, flow 339.11 bbls 40-gr, ¼-in, gor 1125/1, td 7805 ft, pb 7012 ft.

UPPER TEXAS COAST NEW PAY TEST

Hardin County—Sour Lake NW Flk Oil Discovery: Texas Co.'s Mrs. R. H. Kirby 1, 1320 fr sl 170-ac lse, Stephen Jackson sur, sand 3270 ft, perf 24 shots 3272-78 ft, pump 35 bbls, 17.9-gr, 3% wtr, td 4805 ft, pb 3279 ft.

HELP WANTED

■ **Engineers Wanted: Graduate Ch.E., M.E. or E.E., 20 to 29 years of age, having refinery or laboratory experience. Essential industry with postwar continuance. State education, experience, salary expected, and date of availability. P. O. Box 2546, Houston 1, Texas.**

NOTICES

Oil man now in Armed Forces has developed a hydraulic device for slush pump valve seat removal. Drawings and working model look good. Want to contact manufacturer interested perfection, manufacture, sale to oil industry. Address: Box 7, c/o The Oil Weekly, Houston, Texas.

■ **CAPITAL SEEKERS—Interested in raising $25,000 or more should write to Amster Leonard, Fox Bldg., Detroit 1, Michigan.**

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Regular classified advertisements for this special section, set in type this size without border, take flat-rate of 7 cents per word for the first insertion and 5 cents per word for each subsequent insertion of same copy. Display advertisements for this section, set in suitably larger type with ruled border, are $5.00 per inch for the first insertion and $4.00 per inch for subsequent insertions. Remittance must accompany copy which should be sent to:

Trading Post Section, The Oil Weekly
P. O. Box 2608 **Houston 1, Texas**

EAST TEXAS WILDCATS

Henderson County—Failure: Pete N. Wiggins-C. Ed. Hyde et al's Faulk-Coleman 1, 990 ft out nwc 80-ac tr and A. W. Brown sur, elev 472 ft, Midway 1350 ft, Pecan 1812 ft, Austin 2474 ft, Woodbine 2868 ft, abnd 3320 ft.

NORTH TEXAS WILDCATS

Archer County—Failures: G. E. Kadane & Sons' Oil Inv. Co.-Texaco 1, 150 ft snl 2100 ft wel blk 126, J. W. Harris subdiv, abnd 1509 ft.

James L. Nelson et al's First State Bank 1, 1050 ft snl 150 ft ewl of tract, sec 33, blk 5, Clark-Plumb sur, abnd 1203 ft.

Cooke County—Failures: G. E. Kadane & Sons' Parker 1, 830 ft ewl 330 ft nsl P. G. Yarbrough sur A-1175, elev 1027 ft, Ellenburger 1520 ft, abnd 1567 ft.

Phillips' J. Gregory-Bentley 1, 2562 ft wel 2375 ft nsl Geo. G. Steele-Toby sur A-1062, elev 1037 ft, Ellenburger detrital 2335 ft, Ellenburger dolomite 2786 ft, abnd 2890 ft.

Jack County—Oil Discovery: James Stewart & Co.'s Kinder 1-D, 467 ft out nwc B. H. Epperson sur A-208, 2 mi e Sewell field, elev 1123 ft, Bend 3843 ft, Marble Falls 4150 ft, Mississippi 4542 ft, flow 90 bbls 40-gr oil, gor 500/1, 16/64-in, 1000 gals acid Marble Falls perf 4204-24 ft, td 4652 ft, pb 4400 ft.

Throckmorton County—Failure: L. R. Scott et al's Carpenter 1, 200 ft snl 1500 ft ewl TE&L Co. sec 944, abnd 1451 ft.

TEXAS PANHANDLE WILDCATS

Collingsworth County—Failure: C. W. & W. L. Snoddy et al's Wischkaemper 1, nw nw sw H&GN Ry. 63, blk 16, elev 2260 ft, abnd 2306 ft.

Sherman County—Failure: Humble's Pronger Bros. 1, c se nw T&NO Ry. 317, blk 1-T, elev 3733 ft, brown dolomite 2843 ft, abnd 5346 ft.

WYOMING WILDCAT

Sweetwater County — Failure: Mountain Fuel's Unit 1, c se sw 18-13n-99w, Alkali Creek area, tested basal Wasatch, abnd 3574 ft.

WYOMING OUTPOST

Sweetwater County — Extension: Sharples Corp.'s Govt. 1, nw ne nw 14-26n-90w, Lost Soldier, swab 500 bbls oil Tensleep, td 6087 ft.

United States Wildcat Starts

ALABAMA

Greene County: J. L. Gates' J. A. Steele, Tr. 1, nw sw 6-21n-2e, mat on ground.

Walker County: Glen D. Rose O&G Co.'s Ulysses 1, c n¼ nw se 6-13n-6w, lcn.

ARKANSAS

Columbia County: Mayfield Drlg. Co.'s W. A. G. Woodard 1, se ne 6-17s-19w, lcn lime test.

CALIFORNIA

Kern County: Richfield Oil Corp.'s Lerdo 1, se se 1-28-26, Premier area, lcn.

Richfield Oil Corp.'s Lawson-Bennett 1, nw nw 26-30-29, Edison area, lcn.

Richfield Oil Corp.'s A-26-15, nw sw 15-30-28, Mountain View area, lcn.

Los Angeles County: O. F. Darling's 1, ne nw 23-6-10, Costa Mesa area, lcn.

General Pet. Corp.'s Lebrown 1, ne se 21-3-11, Buena Park area, lcn.

Ohio Oil Co.'s Gardena Comm. 1, 24-3-14, lcn.

San Luis Obispo County: H. L. Norris Rancho 1, 23-11-28, lcn.

COLORADO

Bent County: Pacific Western-Frontier's Govt. 1, sw nw se 12-26s-50w, lcn.

FLORIDA

Santa Rosa County: Hunt Oil Co.'s P. R. Miller Mill Co. 3, c se se 8-5n-28w, mim.

ILLINOIS

Clay County: Magnolia's Stanleg 1, sw sw ne 12-4n-8e, dr.

Gallatin County: S. C. Yingling's Hardy 1, se se se 5-8s-10e, lcn.

Marion County: Magnolia's Neal 1, se se se 33-4n-4e, lcn.

Richland County: Pure's Stiff 1-A, sw se se 33-5n-10e, lcn.

Wayne County: Superior's Dulaney 1, sw se ne 15-2s-5e, lcn.

INDIANA

Dubois County: Texas Co.'s Feldmeyer 1, se sw ne 21-3s-5w, lcn.

Vanderburg County: Mohawk Drlg.'s Riggs 1, nw sw ne 11-5s-10w, dr.

KANSAS

Barton County: Black-Marshall's Grosshardt 1, sw sw ne 34-17s-11w, dk.

Butler County: Cromwell & Lewis' Taliaferro 1, ne ne sw 31-26s-7e, mim.

KENTUCKY

Henderson County: Ashland et al's Powell 1, 14-P-21, lcn.

Hopkins County: B. G. Pratt's Wright 1, 2-H-23, dr.

NORTH LOUISIANA

Caddo Parish: James F. Forgotson's Cook 1, se ne 10-19n-16w, lcn Paluxy test.

SOUTH LOUISIANA

Cameron Parish: Cities Service's Lacassine 2, 660 s&e of nwc 6-12n-4w, Thornwell area, lcn 10,500-ft test.

St. Mary Parish: Yegua Corp.'s Guchereau et al 1, start lower front cor sect 71 go s 50° 30 mins w alg lower side line 71 for 802.2 th n 39° 30 mins w at ra 1130 to lcn in 71-9s-5e, 10,500-ft test, rc.

MICHIGAN

Gratiot County: Fisher-McCall's Wright 1, sw sw sw 36-9n-4w, lcn.

Muskegon County: Muskegon Dev. Co.'s Proctor 1, se sw nw 3-12n-15w, rig.

Oceana County: Fisher-McCall's Smith 1, nw nw ne 8-16n-16w, dr.

Saginaw County: Turner Pet. Co.'s Dietrich 1, nw nw ne 35-12n-5e, lcn.

Arenac County: Stork Oil Co.'s Petty 1, se sw nw 25-19n-6e, lcn.

Lake County: Rex O&G Co.'s Samuels 1, ne sw ne 24-17n-11w, dr.

Newaygo County: E. L. Bourrett's Booher 1, ne se se 8-14n-14w, lcn.

Oceana County: Sinclair Wyoming's Newman 1, se se ne 7-13n-16w, lcn.

Sagniaw County: Shell's Nelson 1, nw nw ne 13-11n-2e, lcn.

MISSISSIPPI

Adams County: Humble's Ida W. Stowers 2, begin nwc or wc sect 35 go nely alg nwl 567 th sely at ra 808.3 to lcn in 35-9n-2w.

Holmes County: Sinclair Wyoming's Sallie K. Chisolm 1, c nw sw 19-13n-1e, lcn Tuscaloosa test.

Lauderdale County: M. H. Dees' Simmons-Wright 1, ne sw 4-7n-18e, dr 800 ft.

MONTANA

Gallatin County: W. L. Durham et al's Doornbos 1, 29-1s-3e, dk.

Teton County: Union Oil's Yeager 1, se sw se 21-24n-6w, Willow Creek area, dr 100 ft.

Toole County: Texas Co.'s Ekholt 2, nw se nw 3-33n-1e, Devon area, lcn.

Texas Co.'s Wier 1, nw se ne 4-33n-1e, rur.

NEW MEXICO

Lea County: Drilling & Exploration's Bowman-Federal 1, c se ne 25-20s-34e, 4000-ft test.

Roosevelt County: Frank M. Hill et al's Caudell 1, c ne ne 22-2s-30e, 3500-ft Pre-Permian test.

OKLAHOMA

Hughes County: Deeprock's Hudson 1, ne sw sw 32-7n-10e, lcn.

Edward Schmidt's Cox 1, se se nw 16-9n-9e, drlg 2100 ft.

Wilcox Oil's Rogers 1, sw nw se 28-9n-9e, rig.

Logan County: W. E. Anderson's O'Neill 1, se se se 11-19n-4w, drlg 1300 ft.

Major County: Hunt Oil's Kragh 1, ne se sw 32-22n-14w, lcn.

Okfuskee County: Crosbie's Sykora 1, ne ne sw 20-12n-7e, drlg 1247 ft.

Pottawatomie County: Stanolind's Leas 1, ne se nw 9-9n-4e, lcn.

Seminole County: Schermerhorn Oil's Tiger 1, sw se ne 19-10n-7e, drlg 1928 ft.

Tillman County: Texas Co.'s Taylor 1, se ne ne 36-2s-16w, woc 315 ft.

WEST TEXAS

Cochran County: Stanolind's J. F. Edwards 1, c sw nw PSL 13, blk L, lcn 6500-ft Clear Fork test.

WEST CENTRAL TEXAS

Callahan County: Harold Neely et al's L. Seale 1, 1300 ft snl 990 ft ewl T&NO Ry. sec 5, lcn 1250-ft cable test.

O. B. Perot et al's Ben Halstead 1, 150 ft out nec nw¼ BBB&C Ry. sect 121, lcn 1100-ft cable test.

Coleman County: Hunter & Hunter et al's J. C. Williamson 1, 330 ft out swc ne¼ sec 10, M. M. Givens sur, lcn 3900-ft rotary test.

Eastland County: Kerlyn Oil Co.'s Fenton 1, 2845 ft snl 4170 ft wel James Lahee sur No. 17, lcn 4200-ft cable test.

McCulloch County: Mass-Tex O&G Co.'s Mrs. J. H. Daniels 1, 660 ft out nwc John Classon sur No. 1096, lcn 2000-ft cable test.

C. W. Voyles et al's Anderson 1, 2140 ft nsl 990 ft ewl sect 12, M. H. Henton sur, lcn 800-ft cable test.

Palo Pinto County: W. K. Gordon et al's C. B. Long 1-74, 1200 ft snl 1320 ft ewl T&P Ry. 74, blk 2, lcn 4000-ft cable test.

SOUTHWEST TEXAS

McMullen County: Humble's E. M. Baker 2, 660 fr n&wl M. F. Lowe sur 4, 7330-ac lse, lcn 10,000-ft test.

Starr County: N. F. Neuhaus-J. A. Tarver's H. P. Guerra et al 1, 330 wly fr nwc tr 11 380 swly fr interior cor of nl of tr 10 650 e of wl of tr 10 w½ porc 79, 47-ac lse, lcn 900-ft test.

Webb County: Dulup Oil Co.'s Bruni 8, 990 fr nl 1320 fr el s½ blk 47 Brown subdvn Albercas Gr 640-ac lse, lcn 1800-ft test.

LOWER TEXAS COAST

San Patricio County: Fitzpatrick Dr. Co.'s Winnie K. Maricle et al 1, 467 fr n&sel 181.48-ac lse and sect 1 Taft Farm Lands, lcn 6500-ft test.

Victoria County: Arkansas Fuel Oil Co.'s Etta Terrell 1-A, 2408 fr ely/wl 3005 se of nwl 783.97-ac lse, Miguel Manchaca sur, elev 115 ft, lcn 5600-ft test.

UPPER TEXAS COAST

Brazoria County: Glenn H. McCarthy's Willella W. Smith 1, 330 fr n&el 64.34-ac lse, John Bradley sur, lcn 11,000-ft test.

Jefferson County: Sun's Gilbert Est. 1, 6682.3 fr sl 2316 fr wl John Ricord sur A-189, 1432.87-ac lse, 2576 n of 7589-ft dry hole, lcn 8500-ft test.

Liberty County: Jack W. Frazier's Ada Ola Willis 1, 3500 s at ra fr c of nl (SPRR) th 500 w at ra, Robert Burrell sur, 3107.15-ac lse, lcn 8000-ft test.

EAST TEXAS

Upshur County: Mudge Oil Co.'s W. A. Hewitt 1, 33 ft snl 660 ft wel 72-ac tr, or 2500 ft fr m/e/el 3100 ft fr m/n/sl Wm. Carlton sur, 5 mi e Big Sandy, lcn 5800-ft Paluxy test.

NORTH TEXAS

Archer County: D. H. Bolin et al's E. Colgan 1-A, 900 ft wel 600 ft nsl w½ SP Ry. sec 2, A-1253, sp on 1550-ft test.

Cooke County: Nu-Enamel Oil Operating Co.'s H. C. Bush 1, 330 ft out of m/w nwc of M. C. Carrico sur A-200, 2000-ft rotary test.

Sun's M. G. Fields 1, 467 ft out of m/sl m/el of 250-ac tr, M. J. Eason sur A-346, 8000 ft s by w of Sivells Bend field, 9500-ft Ellenburger test.

Texas Co.'s B. M. Bulkley 1, 660 ft out sec of n 117 ac of e 234 ac of sect 45, W. Holmes-Thos. Toby sur A-1058, 2¼ mi e Walnut Bend fld, 7500-ft Ellenburger test.

Texas Co.'s L. A. Hutson 1-C 330 ft out swc SP Ry. sur A-970, mim for 1900-ft test near Montague County line.

Texas Co.'s W. M. Sowder 1, 330 ft out sec of w 250 ac of Thos. Toby sur A-1044, 1-1/3 mi w by n of Dangle area, 4200-ft Ellenburger test.

Throckmorton County: A. B. Bissey et al's D. K. Robinson 1, 2400 ft snl 2400 ft ewl sect 224, BBB&C Ry. sur, sd 727 ft.

WYOMING

Carbon County: Sinclair's Coffman 2, se nw ne 21-26n-89w, Baily dome, rurt.

Hot Springs County: Pacific Western's Unit 1, nw sw sw 36-44n-93w, lcn.

Park County: Husky Refining's Morrison 2, nw ne sw 23-51n-102w, Half Moon, dr.

Oil Migration Treated In Colorado Quarterly

The January issue of the *Quarterly* of the Colorado School of Mines contains "The Migration and Accumulation of Petroleum and Natural Gas" by F. M. Van Tuyl and Ben H. Parker of the school's department of geology and W. W. Skeeters of Mountain Fuel Supply Company.

A discussion of the extent, character, and time of migration is followed by an analysis of the factors bearing on the problem and the prevailing theories on migration and accumulation are reviewed and weighed. The research was done under the sponsorship of the research committee of AAPG.

Copies may be obtained from the department of publications, Colorado School of Mines, Golden, Colorado, at $1.50, postpaid.

Indian Lands Offered

Sealed bids for oil and gas leases on 14,071.40 acres of restricted Indian lands will be opened at the Kiowa Indian Agency, Anadarko, Oklahoma, at 10 a.m., March 22, according to Superintendent W. B. McCown. Leases are located in Caddo, Comanche, Cotton, Kiowa, Grady and Stephens counties.

Squeaks from the Bull Wheel

Fleet's In—Lights Out

One morning recently a young wife
got out of bed,
slipped into her slippers,
got into her robe,
raised the shade,
uncovered the parrot,
put on the coffee pot,
answered the phone,
and heard a male voice say:
"Hello honey—just got off the ship
I'm coming right over!"
So, the young wife unlocked the door,
took off the pot,
covered the parrot,
pulled down the shade,
stepped out of her robe,
took off her slippers,
slipped into bed,
and heard the parrot mumble:
"Judas priest! What a short day that
was!"

Can't Fool Minnie

Minnie and her boy friend were sitting on the sofa one night when he remarked: "Gee, it's so dark in here I can't see my hand before my face."

And Minnie just laughed and laughed —because she knew all the time his hand wasn't in front of his face.

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Company
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Logical

"Which travels fastest, heat or cold?"
"Heat."
"Why do you say that?"
"Well, you have to catch cold."

Force of Habit

Colonel. "What's the idea of parading all the big men in front of the little men?"

Lieutenant. "It's the sergeant's fault, sir. He used to run a fruit store."

Luckiest Man

Whatever trouble Adam had,
No man in days of yore
Could say when Adam told a joke:
"I've heard that one before."

Remove the Moo

The cowpuncher took one mouthful of his rare steak and bawled for the waiter: "Take this meat back and cook it."

"Why, it is cooked."

"The devil you say! I've seen cows hurt worse'n that and get well."

Yea, Enlighten 'em

The manager of the burlesque troupe was trying to convince the camp commander that he should have permission to put on a show at the camp.

"Isn't it true the American Army is fighting to defend womanhood?"

"Yes, I guess so."

"Well, why don't you show them what they're fighting for—all of it?"

A Woman Awakened

"Are you keeping a hope chest?"

"With a chest like mine, there is no hope."

Poet's Nook

The glance that over cocktails
seems so sweet,
May be less charming over
shredded wheat.

A Coitain Resemblance

"Gee, Moitle, look at the boid."
"Not boid—bird."
"Well, it choips like a boid."

That Got Him

When a man began boasting that he could name any brand of liquor, a friend pulled a flask from his pocket and invited him to taste the contents and tell him what it was.

He did so and promptly spat it out. "That's gasoline, you fool!"

"Yeah, I know. But what brand?"

This Curious World

"Girls, girls," sighed the sailor. "If only I could fall into their arms without falling into their hands."

A lot of auto wrecks result from the driver hugging the wrong curve.

The way to tell a city girl from a country girl is to watch 'em in a high wind. The city girl will grab her hat and the country girl will grab her skirt.

Did you ever wonder how many fig leaves Eve tried before she said: "I'll take this one?"

If girls only knew it, men like the shy, demure type—the sort you have to whistle at twice.

If some women's hindsight was as good as their foresight, they wouldn't think of wearing of slacks.

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SEATS and BALLS

- Available in a grade to meet the individual well pumping problem.
- Furnish longer continuous runs.
- Fewer pulls for replacement.
- Insure more fluid lift economy.

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Standco
NO-SMOKE
STANDCO BRAKE LINING
Is the driller's best friend because it makes the easiest brake known and "feeds off" evenly while drilling. It never scores brake rims. See page 2808 Composite Catalog.
Standco Brake Lining Co.
HOUSTON

Men in the Industry's News

BURL S. WATSON, a director of Cities Service Company since 1940, has been named a vice president. Ernest H. Johnston has been elected treasurer; Erle G. Christian, comptroller, has been elected secretary; and Chester E. Weger will succeed Christian.

Burl S. Watson

Watson, a graduate of the University of Alabama in 1917, joined Cities Service in Toledo, went to New York in the early 20's and became assistant to President W. Alton Jones in 1930. He became president of 60 Wall Tower, Inc., and was largely responsible for the construction of the building in which Cities Service makes its headquarters. In 1940 he became assistant to Temple W. Tutwiler, president of Petroleum Advisers, Inc., coordinator of Cities Service activities in petroleum operating companies, and in 1942 he was made executive vice president of the petroleum unit. He also is an officer or director of a number of petroleum, natural gas and electric utility subsidiaries, and is in charge of Cities Service's realty holdings in lower Manhattan.

Johnston has been with Cities Service for 38 years and a member of its board of directors since 1916. Christian joined the company in 1914 as a meter reader and was made comptroller in 1939. Weger joined Cities Service in 1916, became manager of the budget department in 1924 and was made treasurer of Petroleum Advisers, Inc., in 1938.

V. A. INDIG, former purchasing agent for Kettleman North Dome Association and for the past three years with the Navy Department Procurement Division of Bureau of Supplies and Accounts in Washington, is visiting in Houston on his way back to California, where he will be connected with the oil industry.

JERRY NEWBY of Oklahoma City, has been named American Association of Petroleum Geologists representative for western Oklahoma, succeeding Richard W. Camp of Consolidated Gas Company.

H. WINSTON HULL, West Texas district landman for Skelly Oil Company and an employe for 17 years, has resigned to join Texas Gulf Producing Company in the same capacity with headquarters at Midland, Texas. The latter firm recently acquired substantial holdings in the Permian Basin through absorption of Snowden & McSweeney Company. H. H. Kaderli, assistant to Hull for three years, becomes district landman for Skelly Oil Company, with James R. Maedgen, former scout, as his assistant.

ELLIS H. WIET, division manager of wholesale sales for Skelly Oil Company, has been promoted to assistant sales manager and will divide his time between Tulsa and Kansas City.

WILLIAM MORRISON, formerly with the Honolulu Oil Corporation, is leaving for Chile, where he will be in charge of George Livermore's drilling operations for Corporaccion de Fomento de Production, a Chilean government entity.

Livermore has a contract to drill several wells for the Chilean government corporation in the extreme southern part of Chile, using both a cable tool and a rotary rig. Locations for several tests have been made by the United Geophysical Corporation, following extensive geophysical work.

Headquarters of Morrison will be at Punta, Arenas, Chile.

GEORGE E. BURGHER, Tulsa division manager for Continental Oil Company, and Edward C. Burris, assistant dean, division of commerce and associate professor of economics, Oklahoma A. & M. College, addressed the Oklahoma Petroleum Accountants Society at Tulsa.

THEODORE G. GLASS, vice president of the Oklahoma City Geological Society, has been transferred from Oklahoma City by Sinclair Prairie Oil Company, to Amarillo, Texas, where he will be district geologist.

SAM L. LEWK was elected president of the Shell Tulsa Credit Union, composed of Shell Oil Company employees. Other officers named include A. R. Hassler, vice president; F. M. Masojednik, treasurer; M. A. McLaughlin, secretary; J. H. Radford and K. A. Klager, chairmen of the credit and supervisory committees, respectively. Jack Carter and J. Earl Simpson were named directors.

JOSEPH W. GRAYBEAL, petroleum engineer for Humble Oil & Refining Company, was elected president of the Permian Basin Engineering Association, Which has headquarters at Midland, Texas. M. B. Hayes of Phillips Petroleum Company, Odessa, and T. L. Speed of the West Texas Engineering Service Company, were chosen vice president and secretary-treasurer, respectively. H. E. Legendre of Ohio Oil Company is chairman of the program committee.

BENJAMIN T. SIMMONS, geologist for General Crude Oil Company for 3½ years, left the company on March 1 to become a consulting geologist with offices at 1209 Second National Bank Building, Houston. Simmons received his M.S in geology from the University of Rochester in 1936, and worked in the geophysical department of Stanolind Oil & Gas Company for a short time before spending two years in South America as geologist for Standard Oil Company. He returned in 1939 to become associated with Michael T. Halbouty, Houston consultant, and joined General Crude in 1941.

Benjamin T. Simmons

Deaths

THOMAS A. O'DONNELL, first president of the American Petroleum Institute, died in Los Angeles, February 20.

Thomas A. O'Donnell

O'Donnell, 73, was born in the Pennsylvania oil country 13 years after Col. E. L. Drake discovered oil at Titusville, Pennsylvania. In 1893 he went to California and became a lease worker, later a contractor, and eventually entered the producing branch. He was president of the American Petroleum Company, a Doheny concern, and was active in developing the Coalinga, Midway-Sunset and Kern River fields of California.

O'Donnell helped organize the Independent Producers' Agency of California and during World War I he was in charge of production in the oil division of the U. S. Fuel Administration.

He became president of API on March 26, 1919, and held the office until December 11, 1924. On the latter date, at the fifth annual meeting of the Institute in Fort Worth, O'Donnell declared the oil reserves of the U. S. would last ten times ten years.

HARRY O. POWELL, 60, vice president of the Mid-Continent Supply Company and previously an official of the National Supply Company, died February 26 at his Fort Worth home.

Powell joined National Supply as a clerk at Muncie, Indiana, his boyhood home, advanced to store manager, and was transferred to Fort Worth in 1918. He was manager of tubular sales in National Supply's Texas division when he became associated with Mid-Continent Supply in 1940.

LYNN B. RIDDLE, 55, independent operator and president of Life Line Pipe Company, Nowata, Oklahoma, died February 22, in Tulsa after an extended illness. He went to Tulsa in 1917 as assistant manager of the production department of The Pure Oil Company and later was vice president in charge of the production and land departments of the Deep Rock Oil Corporation until 1933, when he became an independent operator.

JOHN T. WYSE of Houston, an employe of Humble Oil & Refining Company, died February 27. Wyse, 30, was employed in the production accounting department. He joined Humble in 1932.

GEORGE FARLEY, Midland, Texas, drilling contractor and producer, was fatally injured February 25 when he fell from his hotel room window at Mineral Wells, Texas.

Notes for the Equipment Buyer and User

Air-Operated Rotary Slip

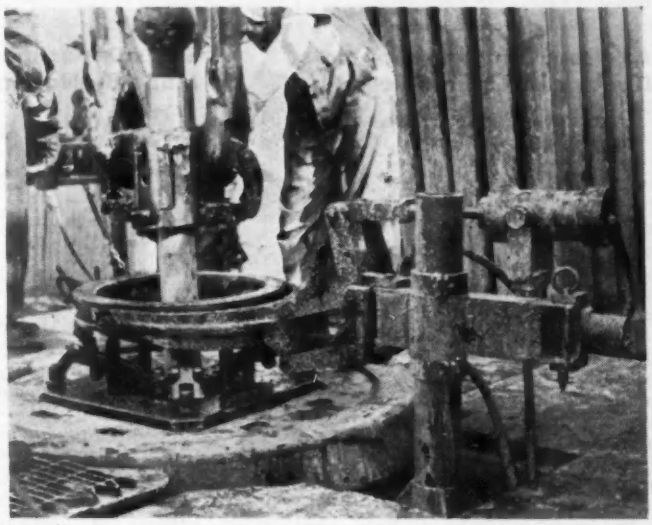
BEN F. KELLEY COMPANY

Ben F. Kelley Company, Incorporated, Tulsa, has developed an air-operated rotary slip unit which provides many special features, and made its first installation on a rig now drilling a deep well in the Texas Gulf Coast.

The Kelco Safety Air-Operated Rotary Slips are designed to provide efficient and safe operation, reducing injuries to workmen, and speeding up operations while coming out or going in the hole with drill pipe. Floor men are relieved of the strenuous labor involved in handling a set of slips time after time while working a long string of drill stem, attendant injuries to hands and feet are eliminated, and there is little possibility of dropping the slips in the hole to cause long and expensive delays while fishing them out. Pulling and setting of the slips is done by the driller from his station at the controls by simply moving a lever. He is able to get perfect coordination between elevators and slips.

A one-horsepower compressor furnishes more than ample power to actuate the slips, and is powered by an electric motor drawing current from the rig's lighting system, and the designer of the unit has indicated that conversion to steam operation would be relatively simple.

The whole unit is compact and simple in operation. When air pressure is applied to the piston in the air cylinder, the piston rod actuates a bell crank which raises or lowers a flanged master ring with a slip yoke which allows the ring to revolve freely with the rotary table. The ring is positioned above the master bushing in the rotary table and has guide plungers to hold it in proper alignment. With the ring lowered, slips are in position, gripping the pipe. Raising the ring raises the slips which are connected through a system of links which cause them to move upward and back away from the hole, leaving plenty of clearance for passage of bits and protectors. There is a safety latch which insures that the slips will remain in position even if the air hose blows off, or if pressure should fail for any cause.



Kelley Rotay Slip

C. Lee Cook's Packings Described In New Catalog

C. Lee Cook Manufacturing Company, Louisville, has issued a catalog describing the complete line of Cook's Metallic Packings, for piston rods of all engines and compressors. These packings have found their greatest use in engines and compressors of this general type, but they are equally adaptable to all classes of reciprocating machines in which gases are compressed or expanded.

According to the manufacturers, these packings have kept pace with changing demands of ever higher pressures and temperatures until today their use extends throughout the world. The catalog illustrates and describes the various packings and notes their application.

Norris Gets Contract

W. C. Norris, Manufacturer, Incorporated, Tulsa, has been given an Army contract to manufacture 10 million packing stops for 105 mm. shells. The stops are to prevent shells from being duds. The item is one which has often been critically short at the front.

Compressors Described

Ingersoll-Rand Company, Phillipsburg, New Jersey, announces a catalog describing KVG compressors which have been designed for services such as repressuring, recycling and gas distribution. The catalog is a complete and instructive book. It lists the basic features and advantages of the compressor and includes 2-page cross-sections of end and longitudinal views and also full specifications which are clearly explained. Several pages of installation photographs show the compressors in actual service.

Drilling Firm Formed

A new drilling company has been formed with offices in Alice, Texas, which will operate under the name of M & G Drilling Co., Ltd. Portable power rigs and steam rigs will be operated under the personnel of Kirkwood & Morgan, drilling contractors.

H. J. Mosser and Joe Gleason of Alice own the company which will lease the rigs to Kirkwood & Morgan. Both Kirkwood and Morgan have had wide experience in various oilfields of the country.

Aluminum Mallets

GREENE, TWEED & COMPANY

Greene, Tweed & Company, Palmetto Building, Bronx Boulevard at 238th Street, New York 66, announces a line of aluminum mallets and hammers developed for all types of work requiring a soft-faced striking tool.

These hammers and mallets are sparkproof and easily machined for refacing. Proportions of both the mallet heads and hammer faces have been carefully worked out to provide well-balanced tools easy to handle.

Production Begins In New Homestead Valve Plant

Homestead Valve Manufacturing Company, Corapolis, Pennsylvania, has started production in its new cleaning-compound manufacturing plant at Edgeworth, Pennsylvania.

The plant will supply industry and all branches of the armed forces with compounds for Hypressure Jennys and other steam spray cleaning machines to restore machinery, tanks, planes, trucks, bull-dozers and other war materiel to fighting condition. The plant will also make compounds for use with "dip-tank," "soaker-tank," and other methods of cleaning.

U. S. Rubber Names Houston District Representative

M. H. Parrish has been named manager of the Houston district office of United States Rubber Company, with headquarters at 1310 Franklin Avenue, Houston. He will supervise mechanical sales in the Gulf Coast territory.

Awarded Second Star

Hanlon-Waters, Incorporated, Tulsa, has been awarded a second white star to its Army-Navy "E" pennant. The company manufacturers portable pipe lines and other equipment for use by the armed forces. It was awarded its first white star last July.

Distributor Named

Appointment of Simson-Maxwell Ltd., of Vancouver, as British Columbia representative of The Cooper-Bessemer Corporation, Mount Vernon, Ohio, has been announced.

The new distributor will handle all Cooper-Bessemer vertical diesels, both marine and stationary, ranging from 200 to 1900 horsepower, the GAW horizontal stationary diesel engine and the Type GX3A air starting units in the British Columbia territory.

Tulsa Company Formed

M. A. Hayes and D. J. Condit have formed the Hayes-Condit Company with offices at 624 S. Cheyenne Street, Tulsa, to provide equipment and engineering service for the process industries and to act as manufacturers' representatives in the mid-continent area for a number of well-known equipment lines in the petroleum industry.

LUFKIN

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FOR INSIDE, OUTSIDE, HEIGHT AND DEPTH MEASURING

Every oil man should carry a Lufkin "Mezurall" Tape-Rule. It easily slips into your vest pocket—weighs but 3 ounces. The ½ inch wide blade, stiffened by concave forming, can be projected unsupported yet will flex to measure curves or odd shapes. With a "Mezurall" you can take exact inside or outside measurements. End hook permits you to take out-of-reach measurements.

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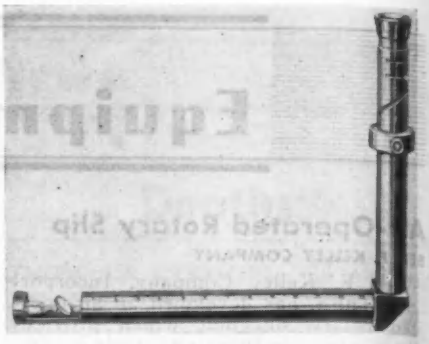
TAPES • RULES • PRECISION TOOLS

Inspection Tool

POLAN INDUSTRIES

Polan Industries, Huntington, West Virginia, has announced the Polan Borescope available for private industry. The instruments originally were designed for the internal surface inspection of gun bores.

The instrument, made in several models for different uses, consists of a combination of lenses and lighting arrangements by which it is possible to visually inspect the interior of tubular bodies from 13/16 to 9 inches in diameter and in lengths up to 30 feet. Design is rugged for every day use.



Polan Borescope

Axelson Company Appoints Director of Lathe Sales

Axelson Manufacturing Company, Los Angeles, has appointed W. H. Jackson to replace A. G. Haglund, who recently resigned. Jackson will be chief of foreign and domestic lathe sales.

He joined Axelson in 1908 as a machinist, and has since been shop foreman, purchasing agent, plant manager, divisional sales manager and most recently in charge of procuring and expediting vital war materials.

W. H. Jackson

Haglund resigned as vice president in charge of lathe sales to enter business for himself, and will be affiliated with the Griffin & Ross Machinery Company, of Los Angeles, representative for Axelson lathes.

J. H. PATTERSON has been named manager of exports for Cummins Diesel Export Corporation, subsidy of Cummins Engine Company, Inc., Columbus, Indiana.

J. H. Patterson

Patterson has specialized in the development of service and sales organizations for 20 years. Prior to his appointment as export manager, he was division manager of National Refining Company.

With many engines already in service in Latin America and other countries, Cummins anticipates a much greater volume of export sales after the war because of the increasing industrialization of Central and South America, especially in the petroleum, mining, construction, marine and automotive fields.

Patterson's headquarters will be at 6303 Chrysler Building, New York.

S/SGT. JOHN L. PELL of Tulsa, formerly employed by Maloney Tank Manufacturing Company, and holder of the Air Medal with oak leaf cluster and the Distinguished Unit badge, has been missing in action over Hungary since February 1. He was a gunner on a B-24 Liberator and had participated in numerous bombing missions over Europe.

Sales Department Changes Made By National Tube

Three changes in the sales department of United States Steel's National Tube Company have been announced by J. E. Goble, vice president in charge of sales.

J. B. Graham becomes assistant to the vice president in charge of sales. W. J. McKee will be central area sales manager and W. T. Miller is named assisitant to general manager of sales. Graham and McKee have been assistant general managers of sales since 1936.

Graham began working for National Tube in 1905, became an oil field representative in 1917 and later was made superintendent of field work and inspection. He has specialized in pipe sales for the oil industry.

McKee started with the company in 1912 as an engineer. In 1931, he became manager of sales of the company's Tulsa office and later held the same position in New York.

Miller has held various sales positions since 1907.

J. R. MAHAN has been appointed director of engineering for The National Supply Company plants at Toledo and Springfield, Ohio; Torrance, California; Carnegie, Pennsylvania, and Houston.

J. R. Mahan

From his headquarters in Toledo, Mahan will formulate and direct general engineering policies, coordinate engineering activities and supervise the development and standardization of all manufactured products except tubular items.

Mahan joined National's engineering staff in 1922, following completion of engineering courses at the University of Kansas and post-graduate work at Massachusetts Institute of Technology. In 1935 he was appointed chief engineer of the Toleda plant and has since served in that capacity.

EARL H. COCHRAN has been named manager of the California sales division for Fred E. Cooper. He had been in charge of the company's foreign sales and has just returned from an extensive visit in South America.

E. L. FARRAH, with Williams-Copeland Drilling Company of Tulsa, has been transferred from Chickasha to Oklahoma City.

CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS.

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MASTER VALVES
with
UNEQUAL FLANGES

The **ORBIT GEAR OPERATED MASTER VALVE** makes your Christmas Tree more compact by eliminating the use of an adapter flange — also eliminating chances for additional gasket leaks. The Unequal Flanges are cast integral with the body of the Valve.

Orbit Gear Operated Master Valve

This valve can be furnished thru all fabricators of Xmas Trees or thru any of your local supply stores at a price comparable to that of other leading valves. The Orbit Valve requires no lubrication to effect a seal.

See 1944 Composite Catalog Pages 2193 to 2212

SERVICE REPRESENTATIVES

R. G. "Bob" Cole, Houston, Texas
Phone Fairfax 0057
Warehouse 1121 Rothwell, Sect. 15
Houston

Earl F. Warren, Phone 919-W, Alice, Texas

Rex E. Galloup, Phone 6436, Lubbock, Texas

ORBIT VALVE COMPANY
TULSA, OKLAHOMA

HOMCO District Superintendents Meet

Above are those in attendance at a meeting of the district superintendents of Houston Oil Field Material Company, cutting and fishing tool department. Left to right, back row: J. M. Patterson, Odessa; D. U. Skinner, public relations, Houston; George E. Justice, vice president, Houston; R. E. Golemon, Corpus Christi; R. G. Alford, New Iberia; Earl Sawyer, Magnolia, Arkansas; T. C. Smith, superintendent, Houston; and Ross Andress, Houma. Front row: L. A. Martin, assistant superintendent, Houston; G. E. Matter, Long Beach; Walter Harrison, Corpus Christi; C. G. Wheeler, Eastern Venezuela; and L. F. Jeter, chief clerk, Houston.

FRED F. FLORENCE, president of the Republic National Bank of Dallas, has been given the Linz Award for 1944 as the "citizen of Dallas whose deeds during 1944 resulted in the greatest benefits to the community."

U. E. SANDELIN has been appointed manager of the Allis-Chalmers Manufacturing Company's Seattle, Washington, district office.

Sandelin, who succeeds A. J. Schmitz, now Pacific regional manager, formerly was attached to the Allis-Chalmers district office in Washington, D. C.

CAPTAIN FRANCIS N. IRVING, head of Lightner Torpedo Company, has been placed on the inactive service list and has returned to Oklahoma City. He had been stationed at the Navajo Ordnance depot, Flagstaff, Arizona.

A. W. CHANDLER, formerly chief mechanical engineer for Engineering Laboratories, Inc., has joined the staff of Refinery Supply Company, of Tulsa, and will specialize in gas engineering products manufactured by the company.

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